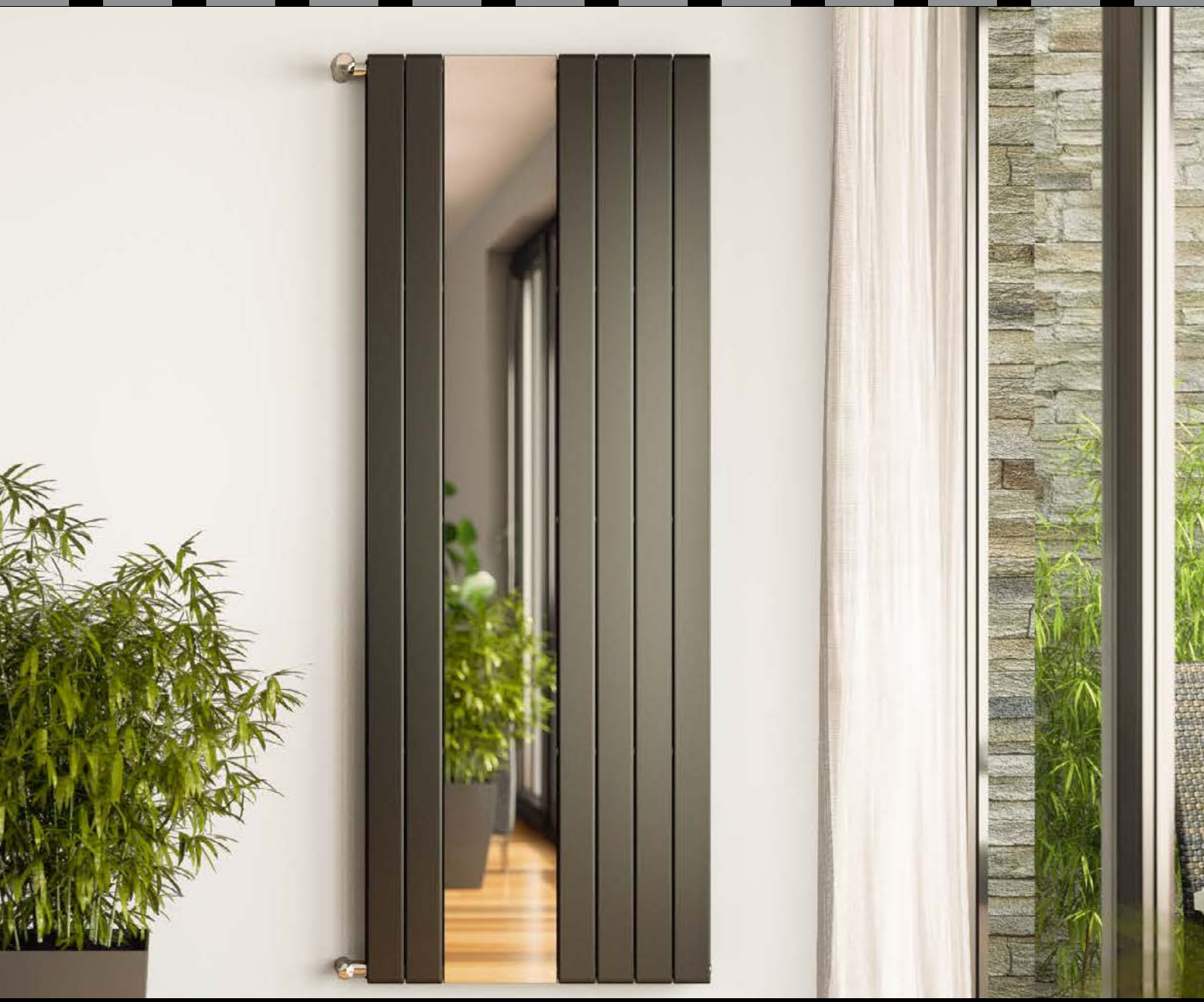
KORADO®
...heat for you

KORATHERM



K-DESIGN

03/19

The KORATHERM 02/2019 catalogue replaces all previous issues.

The new plant KORADO, a.s. is with its technological equipment and organizational structure the most modern factory for the production of radiators in Europe.

Its modern and sophisticated set-up in the area of 30 000 m^2 enables further increases of production capacity whenever needed. The choice of all technology was driven by the maximum effort to ensure environment protection inside the factory as well as in its surroundings.

KORADO, a.s. is the holder of the ISO 9001 : 2015 quality certificate.

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TOWEL RAIL
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UNITS
KORASMART
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PRODUCT PORTFOLIO

A very wide portfolio of products enables complex design solutions under one brand for each building and every room, delivering maximum compatibility, design convenience and service, individual solutions as well as financial savings.

Design radiators **KORATHERM** are characterized by interconnection of elegant design with an efficient way of sharing heat and represent so a novel addition for every interior. Variable connection solution and a wide variety of colour schemes will satisfy even the most demanding customer.

KORATHERM REFLEX

KORATHERM VERTIKAL

KORATHERM VERTIKAL - M

KORATHERM HORIZONTAL - K

KORATHERM HORIZONTAL - M

KORATHERM HORIZONTAL

KORATHERM HORIZONTAL VKM

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GENERAL INFORMATION

Description and Design Solution

KORATHERM design radiators are designed for two-pipe heating systems with forced circulation of the heat transfer agent.

Closed steel profiles of rectangular cross-section of 70 × 11 mm are used as heating elements, distribution and collection profiles have an oval cross-section of 50 × 30 mm or, as the case may be, 95 × 35 mm. Some Types are supplemented with an additional transfer surface of 45 mm depth.

Version

KORATHERM design radiators are manufactured in three basic versions, which the individual models are then based on:

REFLEX Version

KORATHERM REFLEX are special design radiators with vertically aligned heating profiles where the heating surface includes a 220 × 1800 mm mirror, which is attached to a base of zinc-coated sheet metal. It is delivered in Types 10 and 20 with full side covers.

VERTIKAL Version

The heating profiles are aligned vertically. All models are delivered with full side covers.

KORATHERM VERTIKAL is a model that allows a side connection from the top-down with a connecting pitch derived from the height H.

KORATHERM VERTIKAL - M is a model that allows a bottom middle connection with a connecting pitch of 50 mm.

HORIZONTAL Version

The heating profiles are aligned horizontally. The Type 10 is supplied with a full top cover, the other Types with a top grille.

KORATHERM HORIZONTAL is a model which allows a side connection from the bottom down with a connecting pitch derived from the length L.

KORATHERM HORIZONTAL - M is a model which allows a bottom middle connection with a 50 mm pitch.

KORATHERM HORIZONTAL - K is a model allowing for the universal lateral connection to the heating system with the connection pitch according to height H.

KORATHERM HORIZONTAL VKM is a model which allows a bottom middle connection with a 50 mm pitch. The model is fitted with an integrated integral connecting tappings and an inserted control valve.

Operating conditions

The maximum operating temperature of the heat transfer agent is 110 °C.

The maximum operational overpressure is 4 bar, the testing overpressure is 5.2 bar.

The radiators must be installed in a professional way in hot water systems that are professionally designed to comply with VDI 2035 with regard to the protection against damage caused by corrosion and scale. It is necessary to adhere to the following main water quality attributes:

- pH range 8.5 – 9.5 (this applies to aluminum-free systems)
- overall water hardness (content of Ca + Mg ions) up to 1 mmol/l
- salinity within the range of 300 – 500 µS/cm
- oxygen content max. 0.1 mg/l

Heat Outputs

The heat outputs stated are measured according to the EN 442 standard in an accredited testing room.

Surface Finish

The radiator surface finish is carried out in accordance with the requirements of DIN 55 900. The applied cataphoretic coating technology for the base layers ensures long-term corrosion resistance. The base layer and high quality final surface coating guarantee the hygienic safety of the surface of the radiator and is applied with the maximum regard for the environment.

The basic colour shade is white RAL 9016. Design radiators can also be supplied in other colour shades according to the KORADO colour chart.

Basic Equipment

All models are supplied wrapped in a protective packaging with the required identification, an air vent or, as the case may be, a blanking plug and covers.

The secure mounting of the radiators in VERTIKAL and REFLEX version is provided by the VERTIKAL split bracket (Z-U558), which meets Class 2 according to VDI6036 standard. This bracket is always included in standard delivery.

Mounting brackets for radiators in HORIZONTAL version are delivered on customer's demand, subject to special order.

Installation

Maximum emphasis is put on KORATHERM design radiators' variability and versatility regarding their design and implementation. Design radiators are supplied with welded mounting clips for wall installation (see page 33), but it is possible to order some radiators in HORIZONTAL version without these clips. These radiators are then designed for mounting on the floor (see page 37).

Packaging

The radiators are supplied in a uniform packaging consisting of multilayer cardboard, protective plastic corners and shrink film.

The packaging has not only a protective function in storage, transport or handling, but also during and after installation. The packaging is removed only after completion of all construction and finishing works.

Quality

All radiators are tested for leaks. The test overpressure is 1.3 times the maximum operating overpressure. The established ISO 9001 quality management system guarantees KORADO customers a high and lasting level of quality of products and services provided.

Warranty

The warranty applies to leaks, to the stated values of all technical parameters of KORATHERM design radiators in hot water systems for 5 years from the date of sale. The warranty does not apply to deformations and damage of the radiators caused during transportation, handling and storage or to mechanical or other damage resulting from their unskilled installation.

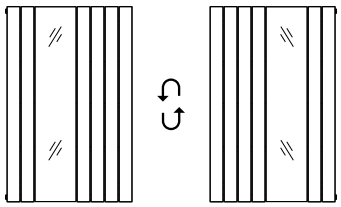
Overview of Types

Models	Type 10	Type 11	Type 20	Type 21	Type 22	Type 23	Type 44	Type 46
KORATHERM VERTIKAL	K10V	K11V	K20V					
KORATHERM VERTIKAL - M	K10VM	K11VM	K20VM					
KORATHERM HORIZONTAL - K		K11HK	K20HK	K21HK	K22HK			
KORATHERM HORIZONTAL	K10H	K11H	K20H	K21H	K22H	K23H	K44H	K46H
KORATHERM HORIZONTAL - M		K11HM	K20HM	K21HM	K22HM	K23HM	K44HM	K46HM
KORATHERM HORIZONTAL VKM		K11HVKM	K20HVKM	K21HVKM	K22HVKM			
KORATHERM REFLEX	K10R		K20R					

KORATHERM REFLEX

Description

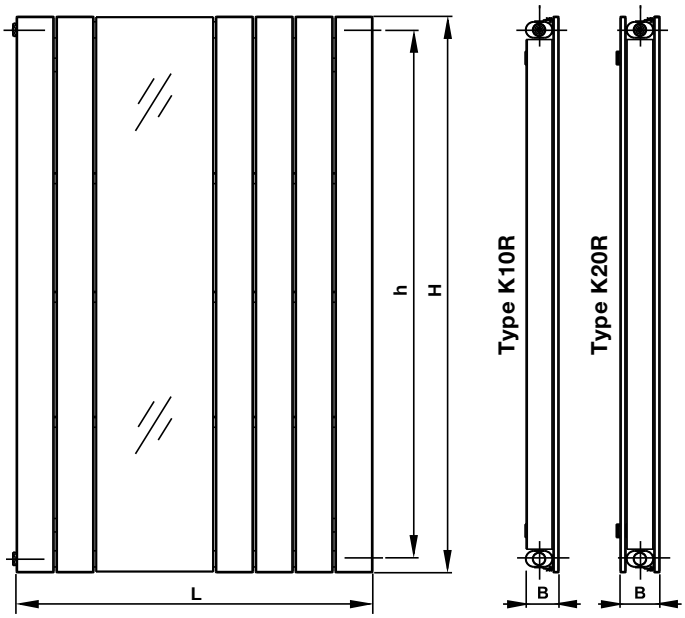
KORATHERM REFLEX is a model of a design series of radiators with vertically aligned profiles, with a 220 × 1800 mm mirror as part of the heating surface. The radiator allows **right or left lateral connection** to the heating system with forced circulation of heat transfer agent. The radiator is supplied with full side covers. Four clips are welded on the back of the radiator. The VERTIKAL split bracket is included in the delivery. It ensures the secure mounting of the radiator. The mirror is glued on the zinc-coated metal bed and can be ordered as a spare part (Z-ND-014) if required. The KORATHERM radiators can be turned and have the mirror placed either on the left or on the right.



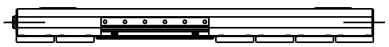
Technical Data

Height H	1800 mm
Length L	514, 662, 810, 958 mm
Depth B Type K10R Type K20R	 61 mm 72 mm
Connecting pitch h	1750 mm
Connecting thread	G ½ inside
Highest allowed working pressure	4 bar
Maximum water temperature	110 °C

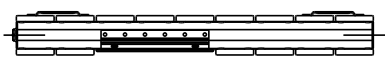
Overview of Types



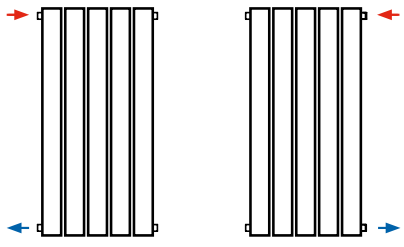
Type K10R



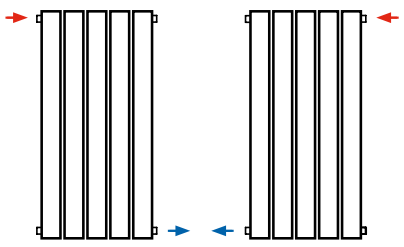
Type K20R



Type of Connection



Side - one side
φ=1



Side - two sides
diagonal
φ=1

KORATHERM VERTIKAL

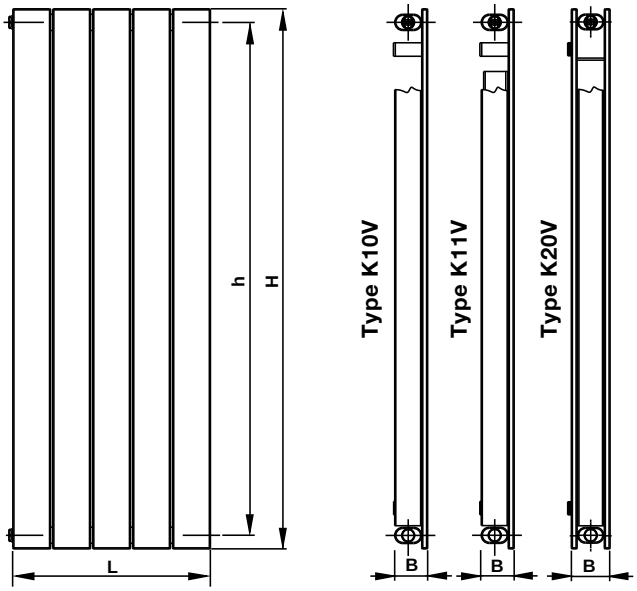
Description

KORATHERM VERTIKAL is a model of a design series of radiators with vertically aligned profiles that allows **right or left side connection** to the heating system with forced circulation of the heat transfer agent. The radiator is supplied with full side covers. Four clips are welded on the back of the radiator. The VERTIKAL split bracket is included in the delivery. It ensures the secure mounting of the radiator.

Technical Data

Height H	500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000 mm
Length L	144, 218, 366, 514, 588, 662, 884, 958 mm
Depth B Type K10V Type K11V Type K20V	 61 mm 61 mm 72 mm
Connecting pitch h	H – 50 mm
Connecting thread	G ½ inside
Highest allowed working pressure	4 bar
Maximum water temperature	110 °C

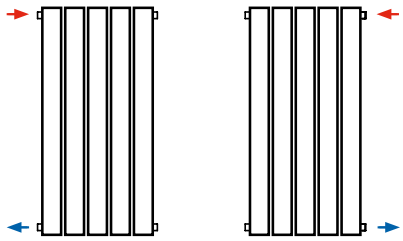
Overview of Types



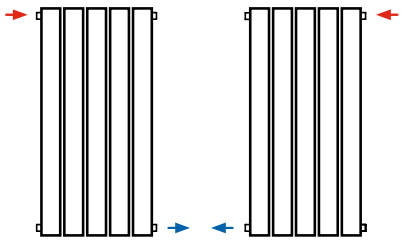
Type K10V, K11V

Type K20V

Type of Connection



Side - one side
φ=1



Side - two sides
diagonal
φ=1

KORATHERM VERTIKAL - M

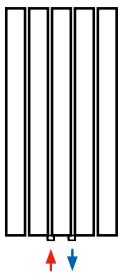
Description

KORATHERM VERTIKAL - M is a model of a design series of radiators with vertically aligned profiles that allows a **bottom middle connection** to the heating system with forced circulation of the heat transfer agent. The radiator is supplied with full side covers. Four clips are welded on the back of the radiator. The VERTIKAL split bracket is included in the delivery. It ensures the secure mounting of the radiator. HM Connection fittings (see page 19) can be used connection to the heating system.

Technical Data

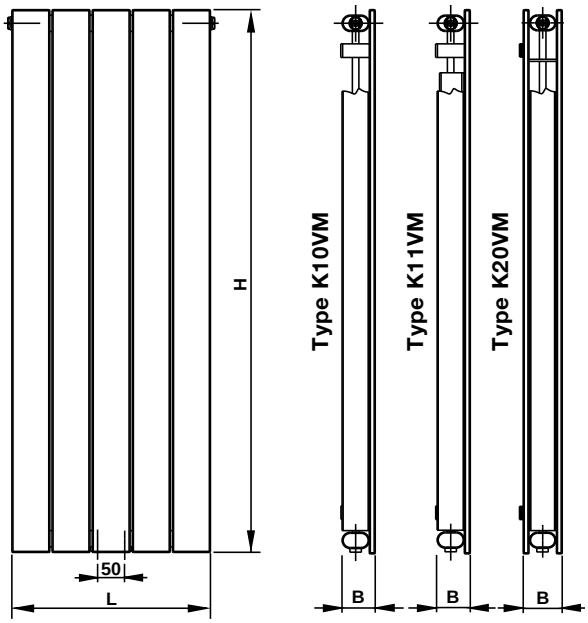
Height H	500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000 mm
Length L	144, 218, 366, 514, 588, 662, 884, 958 mm
Depth B Type K10VM Type K11VM Type K20VM	 61 mm 61 mm 72 mm
Connecting pitch h	50 mm
Connecting thread	G ½ inside
Highest allowed working pressure	4 bar
Maximum water temperature	110 °C

Type of Connection



bottom middle
φ=1

Overview of Types



Type K10VM, K11VM

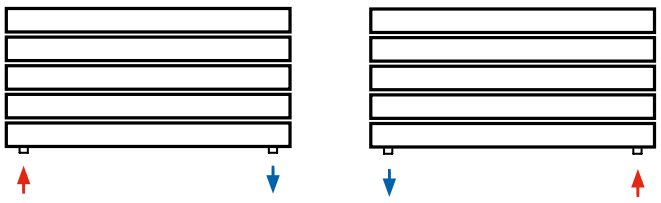
Type K20VM

KORATHERM HORIZONTAL

Technical Data

Height H	144, 218, 366, 514, 588, 662, 884, 958 mm
Length L	500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2300, 2600, 3000 mm
Depth B Type K10H Type K11H Type K20H Type K21H Type K22H	 61 mm 61 mm 72 mm 72 mm 115 mm
Connecting pitch h	L – 50 mm
Connecting thread	G ½ inside
Highest allowed working pressure	4 bar
Maximum water temperature	110 °C

Type of Connection

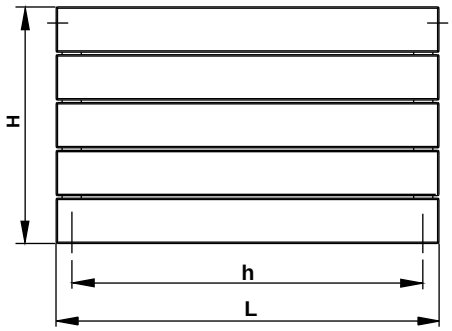


bottom connection
φ=1

Description

KORATHERM HORIZONTAL is a model of a design series of radiators with horizontally aligned profiles, which allows a **side connection from the bottom down** to the heating system with forced circulation of the heat transfer agent. Type 10 is supplied with a full top cover, Types 11, 20, 21 and 22 then with a top cover grille. Four clips are welded on the back of the radiator for installation on the wall, radiators of 1800 mm in length and longer have six welded clips. Types 20, 21 and 22 at a maximum height of 588 mm can be supplied without the back clips. These radiators are designed for mounting on the floor using stand brackets. Mounting of the radiators is not included.

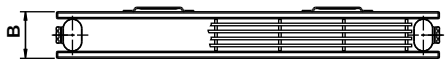
Overview of Types



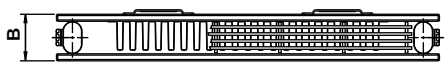
Type K10H

Type K11H

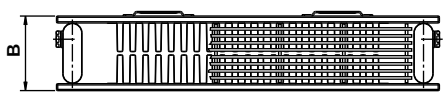
Type K20H



Type K21H



Type K22H



KORATHERM HORIZONTAL - K

Technical Data

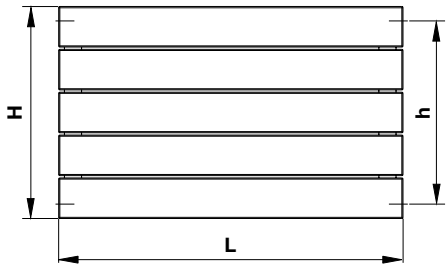
Height H	218, 366, 514, 588, 662, 884 mm
Length L	500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000 mm
Depth B Type K11HK Type K20HK Type K21HK Type K22HK	 61 mm 72 mm 72 mm 115 mm
Connecting pitch h	H - 50 mm
Connecting thread	G 1/2" inside
Highest allowed working pressure	4 bar
Maximum water temperature	110 °C
Flow coefficient A_T Type K11HK Type K20HK Type K21HK Type K22HK	 3.0×10^{-5} m² 3.3×10^{-5} m² 3.3×10^{-5} m² 3.3×10^{-5} m²
Coefficient of resistance ξ_T Type K11HK Type K20HK Type K21HK Type K22HK	 89.8 74.2 74.2 74.2

* In case of the **upwards** a nipple must be **ordered** (Order number Z-ND-067).

Description

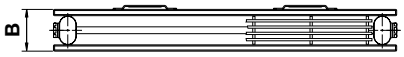
KORATHERM HORIZONTAL - K is a model of the design series of heating bodies with horizontally oriented profiles, allowing for the universal lateral connection to the heating system with the forced circulation of the heat carrier. All types are delivered with the upper covering grid. For the wall assembly there are four clips welded to the back side of the wall, whereas the bodies with the length of at least 1,800 mm have six welded clips. Types 20, 21 and 22 to the maximum height of 588 mm can be fixed to the floor using rack consoles. These bodies can consequently be ordered even without welded clips intended for fixing to the wall. Bodies fixing is not part of the delivery.

Overview of Types

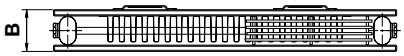


Type K11HK

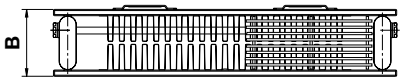
Type K20HK



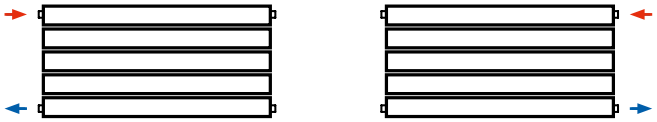
Type K21HK



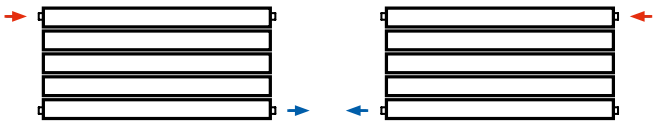
Type K22HK



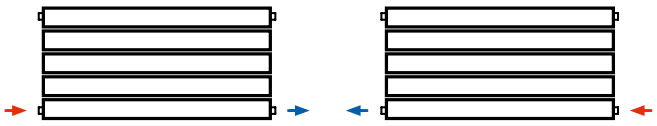
Type of Connection



Side - one side
φ=1



Side - two sides diagonal
φ=1



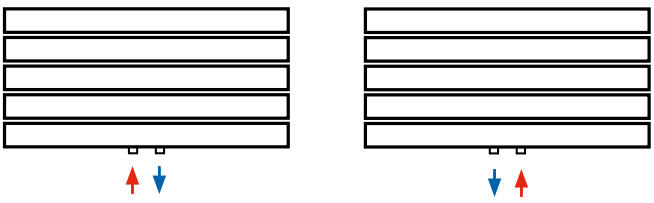
Side - two sides direct*
φ=1

KORATHERM HORIZONTAL - M

Technical Data

Height H	218, 366, 514, 588, 662, 884 mm
Length L	500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000 mm
Depth B Type K11HM Type K20HM Type K21HM Type K22HM	 61 mm 72 mm 72 mm 115 mm
Connecting pitch h	50 mm
Connecting thread	G ½ inside
Highest allowed working pressure	4 bar
Maximum water temperature	110 °C

Type of Connection

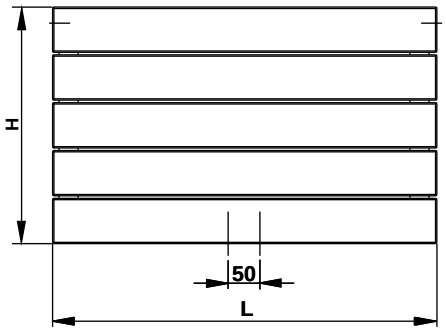


bottom middle
φ=1

Description

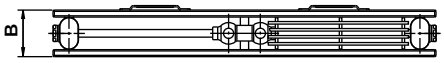
KORATHERM HORIZONTAL - M is a model of a design series of radiators with horizontally aligned profiles, which allows a **bottom middle connection** to the heating system with forced circulation of the heat agent. Type 10 is supplied with a full top cover, Types 11, 20, 21 and 22 then with a top cover grille. Four clips are welded on the back of the radiator for installation on the wall, radiators of 1800 mm in length and longer have six welded clips. Types 20, 21 and 22 at a maximum height of 588 mm can be supplied without the back clips. These radiators are designed for mounting on the floor using stand brackets. Mounting of the radiators is not included. HM Connection fittings (see page 19) can be used connection to the heating system.

Overview of Types



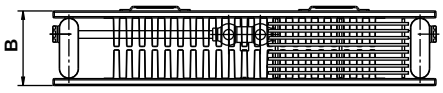
Type K11HM

Type K20HM



Type K21HM

Type K22HM

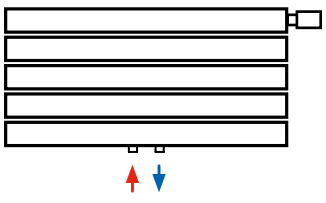


KORATHERM HORIZONTAL VKM

Technical Data

Height H	218, 366, 514, 588, 662, 884 mm
Length L	500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000 mm
Depth B Type 11HVKM Type 20HVKM Type 21HVKM Type 22HVKM	 61 mm 72 mm 72 mm 115 mm
Connecting pitch h	50 mm
Connecting thread	G ½ inside
Highest allowed working pressure	4 bar
Maximum water temperature	110 °C

Type of Connection

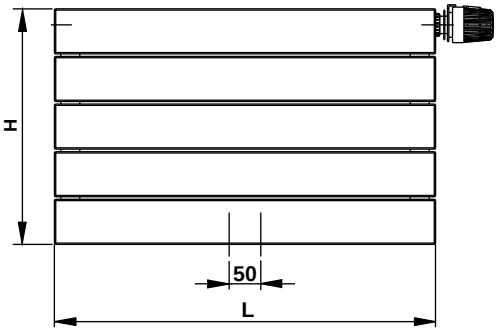


bottom middle
φ=1

Description

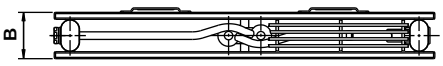
KORATHERM HORIZONTAL VKM is a model of a design series of radiators with horizontally aligned profiles, which allows a **bottom middle** connection to the heating system with forced circulation of the heat transfer agent. It is a radiator with **VENTIL KOMPAKT** version, which is equipped with an integrated control valve. Type 10 is supplied with a full top cover, Types 11, 20, 21 and 22 with a top cover grille Four clips are welded on the back of the radiator for installation on the wall, radiators of 1800 mm in length and longer have six welded clips. Types 20, 21 and 22 at a maximum height of 588 mm can be supplied without the back clips. These radiators are designed for mounting on the floor using stand brackets. Mounting of the radiators is not included.

Overview of Types

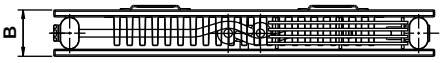


Type 11HVKM

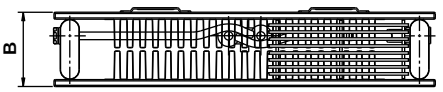
Type 20HVKM



Type 21HVKM



Type 22HVKM



GENERAL INFORMATION –
HORIZONTAL VKM

When using design radiators in **KORATHERM HORIZONTAL VKM** version, it is necessary that the valve setting level is determined by the calculation and specified in the design documentation for their correct operation. It must be respected by an installing company when installing a heating system.

The valve is pre-set from the factory to level 8 and after flushing before starting the heating test it has to be set with a special key to the required setting level.

Example of calculation

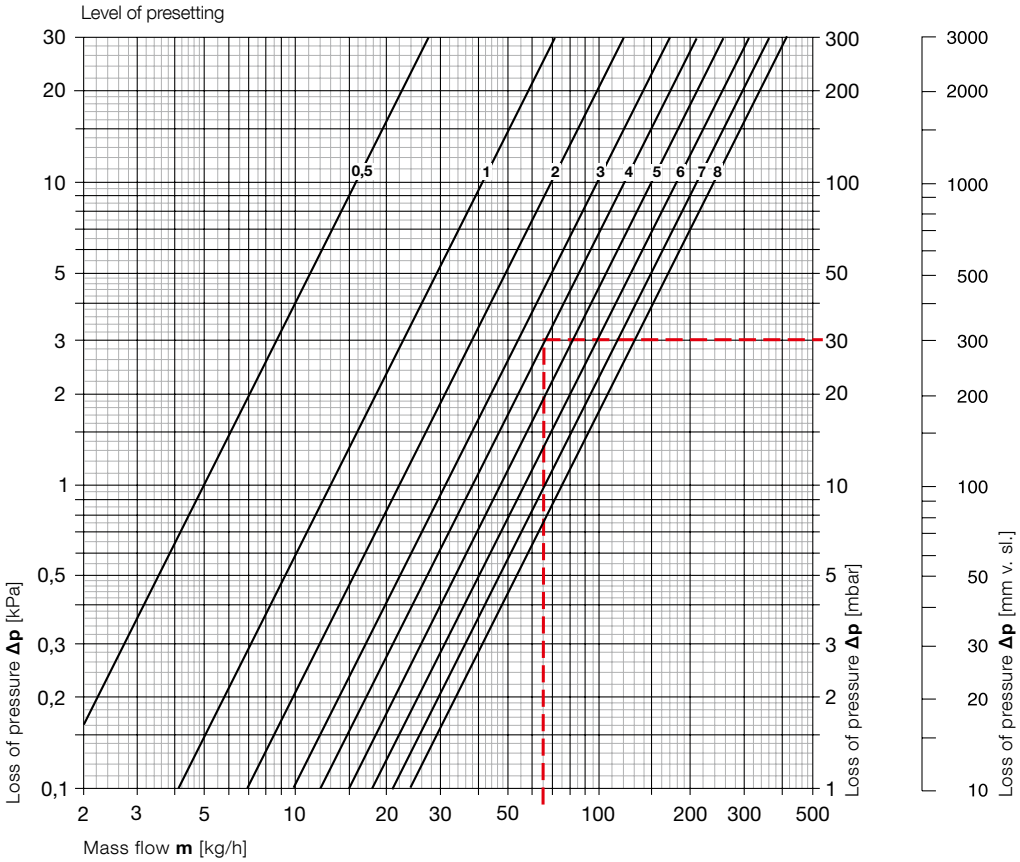
Solution to:	level of presetting			
Given:	heat output	Q	=	1135 W
	cooling of water	$t_1 - t_2$	=	15 K (65/50 °C)
	pressure loss of radiator with valve	Δp	=	30 mbar
	heat capacity of water	c	=	1,163 Wh/kg.K

Solution: weight flow

$$m = \frac{Q}{c \cdot (t_1 - t_2)} = \frac{1135}{1{,}163 \cdot 15} = 65 \text{ kg/h}$$

level of presetting (see diagram): 4

Twin-pipe heating system



Valve with thermostatic head

Level of valve setting	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5	7	7,5	8
k_v [m³/h]	0,05	**0,13**	0,18	**0,22**	0,27	**0,31**	0,35	**0,38**	0,42	**0,47**	0,52	**0,57**	0,62	**0,66**	0,71	**0,75**

Valve without thermostatic head

Level of valve setting	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5	7	7,5	8
k_{vs} [m³/h]	0,05	**0,16**	0,22	**0,27**	0,33	**0,38**	0,41	**0,43**	0,54	**0,65**	0,82	**0,98**	1,11	**1,23**	1,33	**1,43**

Highest allowed working temperature: 110 °C

Highest allowed working pressure: 4 bar

The indicated values of k_v comply with proportionality interval of 2K.

KORATHERM HORIZONTAL, K23H, K44H, K46H

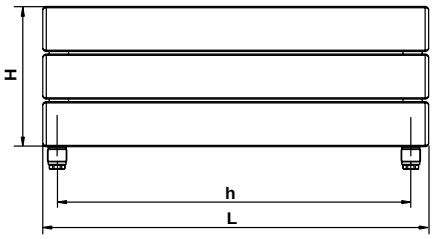
Description

KORATHERM HORIZONTAL in a low version, made 144 or 218 mm high, is a model of a design series of radiators with vertically aligned profiles, which allows a **bottom side connection** to the heating system with forced circulation of the heat transfer agent. Types 44 and 46 are a combination of two radiators. Connection parts are included. The radiators do not have any welded back clips, they are designed for mounting on the floor using stand brackets. Mounting of the radiators is not included.

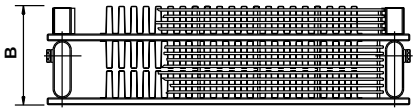
Technical Data

Height H	144, 218 mm
Length L	500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2300, 2600, 3000 mm
Depth B Type K23H Type K44H Type K46H	 160 mm 248 mm 328 mm
Connecting pitch h	L – 50 mm
Connecting thread	G ½ inside
Highest allowed working pressure	4 bar
Maximum water temperature	110 °C

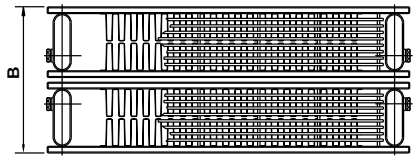
Overview of Types



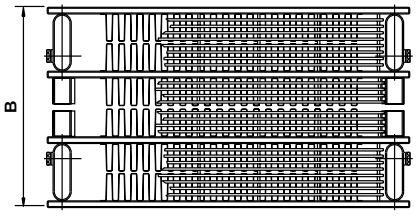
Type K23H



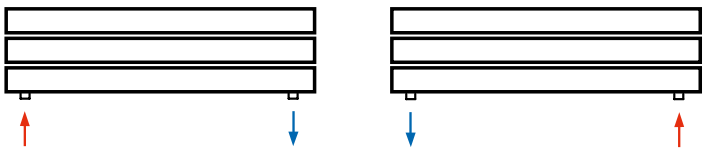
Type K44H



Type K46H



Type of Connection



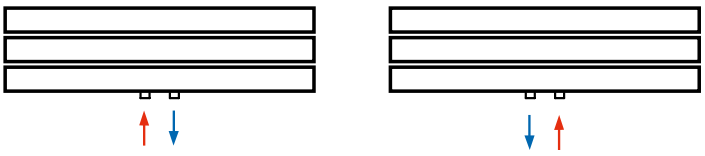
bottom connection
φ=1

KORATHERM HORIZONTAL - M, K23HM, K44HM, K46HM

Technical Data

Height H	144, 218 mm
Length L	500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000 mm
Depth B Type K23HM Type K44HM Type K46HM	 160 mm 248 mm 328 mm
Connecting pitch h	50 mm
Connecting thread	G ½ inside
Highest allowed working pressure	4 bar
Maximum water temperature	110 °C

Type of Connection

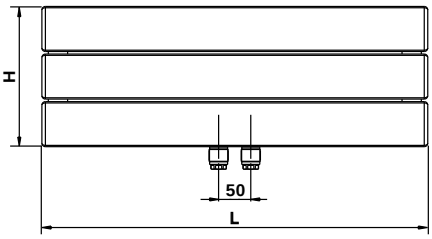


bottom middle
φ=1

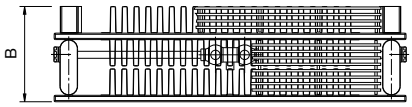
Description

KORATHERM HORIZONTAL - M in a low version, made 144 or 218 mm high, is a model of a design series of radiators with vertically aligned profiles, which allows a **bottom middle connection** to the heating system with forced circulation of the heat transfer agent. Connection parts are included. The radiators do not have any welded back clips, they are designed for mounting on the floor using stand brackets. Mounting of the radiators is not included. HM Connection fittings (see page 19) can be used for connection to the heating system.

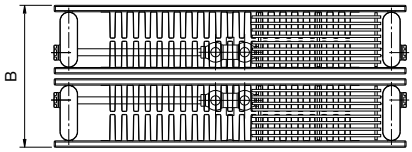
Overview of Types



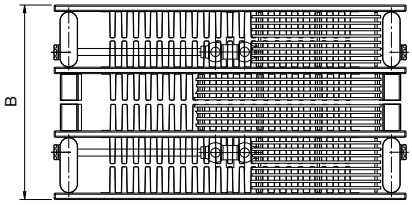
Type K23HM



Type K44HM



Type K46HM



HM FITTING

Description

HM fitting is specially developed for connecting RADIK MM, RADIK PLAN (LINE) VERTIKAL - M and RADIK PREMIUM steel panel radiators, i.e. radiators without an integrated 50 mm bottom connection valve. Advantageously, it can be also used for all other KORALUX and KORATHERM radiators with the same connection to the heating system.

It is an integrated fitting, i.e. a valve and a regulating shut-off fitting are integrated in the fitting body, so that the radiator can be disconnected from the heating system without interruption of operation. **Due to the special fitting design, the outlets for the supply and return pipe connection are optional.**

The fitting allows the presetting of the flow through the radiator, its closing at the inlet and outlet, and the thermostatic head controlling the heat output of the radiator depending on the temperature in the heated room. The presetting degree is given by the number of turns of the regulating fitting cone from the “closed” position. The presetting of the regulation degree is reproducible, i.e. when the flow is closed and subsequently opened, there is no change in setting of the regulation degree.

Assortment

HM fitting delivery includes:

- integrated fitting in a straight or corner version
- thermostatic head in white or “chrome” shade
- 2 pcs of reduction of G ½ to G ¾ with sealing “O” ring
- 2 pcs of EPDM rubber gasket
- installation instructions and operating instructions

On special request, it is possible to deliver:

- universal fitting cover in white
- universal fitting cover in “chrome” shade

Use

The fitting is designed for two-pipe heating systems with forced circulation. It can be used with the following radiator assortment of KORADO, a.s.:

Product range	Radiator model
RADIK	RADIK PLAN VERTIKAL - M RADIK LINE VERTIKAL - M RADIK MM RADIK PREMIUM (for bottom connection only) RADIK PLAN PREMIUM (for bottom connection only) RADIK LINE PREMIUM (for bottom connection only)
KORALUX	KORALUX LINEAR MAX - M KORALUX LINEAR COMFORT - M KORALUX LINEAR CLASSIC - M KORALUX LINEAR EXCLUSIVE - M
	KORALUX RONDO MAX - M KORALUX RONDO COMFORT - M KORALUX RONDO CLASSIC - M KORALUX RONDO EXCLUSIVE - M
KORATHERM	KORATHERM HORIZONTAL - M
	KORATHERM VERTIKAL - M

Notice:
When using the Z-U580, Z-U581 stand brackets for the KORATHERM HORIZONTAL - M model, the HM FITTING from the length L = 700 mm can be used.

Connection Method

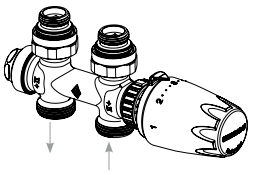
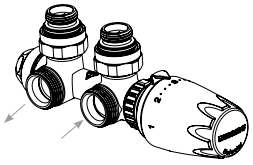
The connection to the heating system is with a G ¾ external thread and clamp connections for copper, plastic, precision steel or multilayer pipes can be used.

The connection of the fitting to the radiator is with a self-sealing double nipple (reduction) from G ½ to G ¾, which is included.

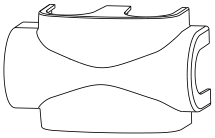
The fitting valve is fitted with M 30 × 1.5 external connection thread for mounting the thermostatic head, which is included in the HM fitting delivery.

How to order

HM FITTING

	Design	Colour of the thermostatic head	Order number
	straight	white	Z-D023
		chrome	Z-D024
	angular	white	Z-D025
		chrome	Z-D026

HM FITTING Cover

	universal	white	Z-D027
		chrome	Z-D028

KORATHERM REFLEX

BASIC TECHNICAL PARAMETERS															
Type	H [mm]	L [mm]	h [mm]	i [prof]	t_1/t_2 [°C]	Heat output **Q** [W] to EN 442 for t_i [°C]					Nominal heat output Q_N [W]	Temperature exponent **n** [-]	K_M [-]	Radiator weight M_T [kg]	Water volume V_T [l]
						15	18	20	22	24					
K10R	1800	514	1750	4	75/65	893	831	791	751	711	791	1,2724	5,4501	22,8	5,1
					70/55	741	682	643	605	567					
					55/45	502	448	413	378	344					
					45/40	370	319	286	254	223					
		662		6	75/65	1227	1142	1086	1031	976	1086	1,2791	7,2892	29,9	7,4
					70/55	1017	936	882	829	777					
					55/45	688	614	565	517	471					
					45/40	506	436	391	347	304					
		810		8	75/65	1561	1452	1381	1310	1241	1381	1,2859	9,0259	40,4	9,7
					70/55	1293	1189	1121	1053	987					
					55/45	873	778	716	655	596					
					45/40	640	552	495	439	385					
		958		10	75/65	1896	1763	1676	1590	1505	1676	1,2926	10,6705	44,0	12,0
					70/55	1568	1442	1358	1276	1196					
					55/45	1057	941	866	792	720					
					45/40	774	667	597	529	464					
K20R	1800	514	1750	4	75/65	1603	1489	1415	1342	1269	1415	1,3063	8,5387	46,3	12,0
					70/55	1323	1215	1144	1075	1006					
					55/45	888	790	726	663	602					
					45/40	648	557	499	442	386					
		662		6	75/65	2126	1976	1877	1779	1683	1877	1,3084	11,2339	60,1	16,3
					70/55	1755	1612	1517	1425	1333					
					55/45	1177	1047	962	879	798					
					45/40	859	738	660	585	511					
		810		8	75/65	2650	2462	2339	2217	2097	2339	1,3104	13,8899	80,5	20,6
					70/55	2187	2008	1890	1775	1661					
					55/45	1466	1303	1198	1094	993					
					45/40	1069	918	821	727	636					
		958		10	75/65	3174	2949	2801	2655	2511	2801	1,3125	16,4974	87,5	24,9
					70/55	2619	2404	2263	2124	1988					
					55/45	1754	1559	1433	1309	1187					
					45/40	1278	1098	982	869	760					

Characteristic equation: $\Phi = K_M \cdot \Delta T^n \left[\frac{W}{m}\right]$, $\Delta T = \frac{t_1 + t_2}{2} - t_i [K]$

t_1 – temperature water-in, t_2 – temperature water-out, t_i – relative air temperature

KORATHERM VERTIKAL, VERTIKAL - M

20 °C	Number of profiles i [pcs]	t_1/t_2 [°C]	Type								
			K10V	K11V	K20V	K10V	K11V	K20V	K10V	K11V	K20V
			K10VM	K11VM	K20VM	K10VM	K11VM	K20VM	K10VM	K11VM	K20VM
Height **H** [mm]			500			600			700		
Length **L** [mm]			Heat output Q [W] to EN 442								
144	2	75/65	90	118	137	107	139	161	124	159	185
		70/55	73	97	111	87	113	131	101	129	150
		55/45	47	63	71	56	73	83	65	84	95
		45/40	33	44	49	39	51	57	45	58	65
218	3	75/65	136	179	207	162	210	244	187	240	281
		70/55	111	146	168	132	172	198	152	196	227
		55/45	72	95	107	85	111	126	98	127	144
		45/40	50	67	73	59	78	86	68	88	99
366	5	75/65	229	301	348	272	353	410	315	403	471
		70/55	187	246	282	221	288	332	256	329	381
		55/45	120	160	179	142	187	211	164	213	242
		45/40	84	112	123	99	130	145	114	148	166
514	7	75/65	322	423	489	382	495	576	442	566	662
		70/55	262	345	396	311	405	466	359	462	536
		55/45	169	224	252	200	262	296	231	299	340
		45/40	117	157	173	139	183	204	160	208	234
588	8	75/65	368	483	559	437	567	659	506	648	757
		70/55	300	395	453	356	463	533	411	529	613
		55/45	193	257	288	229	300	339	264	342	389
		45/40	134	180	198	159	210	233	183	238	267
662	9	75/65	414	544	630	492	638	742	569	730	853
		70/55	337	445	510	400	521	601	463	595	690
		55/45	217	289	324	257	338	382	297	385	438
		45/40	151	202	223	179	236	262	206	268	301
884	12	75/65	553	727	841	657	852	991	760	974	1139
		70/55	451	594	681	534	696	802	618	795	921
		55/45	290	386	433	344	451	510	397	514	585
		45/40	202	270	298	239	315	351	275	359	402
958	13	75/65	600	787	911	712	924	1074	824	1056	1234
		70/55	488	644	738	579	754	869	670	861	998
		55/45	314	418	469	372	489	552	430	557	634
		45/40	219	293	323	259	341	380	298	389	436

BASIC TECHNICAL PARAMETERS

Type	K10V	K11V	K20V	K10V	K11V	K20V	K10V	K11V	K20V
	K10VM	K11VM	K20VM	K10VM	K11VM	K20VM	K10VM	K11VM	K20VM
Height **H** [mm]	500			600			700		
Nominal heat output $\mathbf{Q_N}$ [W/m]	626	822	951	743	964	1121	860	1102	1288
Temperature exponent **n** [-]	1,2638	1,2399	1,2994	1,2682	1,2459	1,3015	1,2725	1,2518	1,3037
$\mathbf{K_M}$ [-]	4,4608	6,4316	5,8957	5,2042	7,3677	6,8928	5,9232	8,2302	7,8518

Weight and water volume see page 30.

Characteristic equation: $\Phi = K_M \cdot \Delta T^n \left[\frac{W}{m}\right]$, $\Delta T = \frac{t_1 + t_2}{2} - t_i$ [K]

t_1 – temperature water-in, t_2 – temperature water-out, t_i – relative air temperature

KORATHERM VERTIKAL, VERTIKAL - M

20 °C	Number of profiles i [pcs]	t_1/t_2 [°C]	Type								
			K10V	K11V	K20V	K10V	K11V	K20V	K10V	K11V	K20V
			K10VM	K11VM	K20VM	K10VM	K11VM	K20VM	K10VM	K11VM	K20VM
Height **H** [mm]			800			900			1000		
Length **L** [mm]			Heat output Q [W] to EN 442								
144	2	75/65	141	178	209	157	197	233	174	216	256
		70/55	114	145	169	128	161	188	141	175	207
		55/45	73	94	107	82	103	119	90	113	131
		45/40	51	65	74	57	72	82	62	78	90
218	3	75/65	213	270	317	238	298	352	263	327	387
		70/55	173	220	256	193	243	285	214	266	313
		55/45	111	142	163	124	156	181	137	171	198
		45/40	77	99	112	86	109	124	94	118	136
366	5	75/65	358	453	532	400	501	591	442	548	650
		70/55	291	369	430	325	408	478	359	446	526
		55/45	186	238	273	208	263	303	229	287	333
		45/40	129	166	187	144	183	208	158	199	228
514	7	75/65	502	636	747	562	704	831	621	770	913
		70/55	408	518	604	456	573	672	504	626	738
		55/45	262	334	383	292	369	426	322	403	468
		45/40	181	233	263	202	257	292	222	279	321
588	8	75/65	574	727	854	643	805	950	710	881	1045
		70/55	467	593	691	522	656	768	576	717	844
		55/45	299	383	438	334	422	487	368	460	535
		45/40	207	266	301	231	293	334	254	320	367
662	9	75/65	647	819	962	724	906	1070	800	992	1176
		70/55	526	667	778	588	738	865	649	807	951
		55/45	337	431	494	376	475	548	415	518	602
		45/40	233	300	339	260	330	376	286	360	413
884	12	75/65	864	1094	1284	966	1210	1429	1068	1324	1571
		70/55	702	891	1039	785	985	1155	867	1077	1270
		55/45	450	575	659	502	635	732	554	692	804
		45/40	312	401	453	347	441	503	383	480	552
958	13	75/65	936	1185	1392	1047	1312	1548	1157		1702
		70/55	761	966	1126	850	1068	1252	939		1376
		55/45	488	623	714	544	688	794	600		872
		45/40	338	434	491	376	478	545	415		598

BASIC TECHNICAL PARAMETERS

Type	K10V	K11V	K20V	K10V	K11V	K20V	K10V	K11V	K20V
	K10VM	K11VM	K20VM	K10VM	K11VM	K20VM	K10VM	K11VM	K20VM
Height **H** [mm]	800			900			1000		
Nominal heat output $\mathbf{Q_N}$ [W/m]	977	1237	1453	1093	1369	1616	1208	1498	1777
Temperature exponent **n** [-]	1,2769	1,2578	1,3058	1,2813	1,2638	1,3079	1,2857	1,2698	1,3101
$\mathbf{K_M}$ [-]	6,6142	9,0241	8,7852	7,2733	9,7554	9,6908	7,9013	10,4270	10,5649

Weight and water volume see page 30.

Characteristic equation: $\Phi = K_M \cdot \Delta T^n \left[\frac{W}{m}\right]$, $\Delta T = \frac{t_1 + t_2}{2} - t_i$ [K]

t_1 – temperature water-in, t_2 – temperature water-out, t_i – relative air temperature

20 °C	Number of profiles i [pcs]	t_1/t_2 [°C]	Type								
			K10V	K11V	K20V	K10V	K11V	K20V	K10V	K11V	K20V
			K10VM	K11VM	K20VM	K10VM	K11VM	K20VM	K10VM	K11VM	K20VM
Height **H** [mm]			1100			1200			1400		
Length **L** [mm]			Heat output Q [W] to EN 442								
144	2	75/65	191	234	279	207	252	302	240	287	347
		70/55	155	190	225	168	205	243	195	233	279
		55/45	99	122	143	107	131	154	124	149	176
		45/40	68	85	98	74	91	105	86	102	120
218	3	75/65	289	354	422	314	382	457	364	435	525
		70/55	234	288	341	254	310	369	295	353	423
		55/45	150	185	216	162	198	233	188	225	266
		45/40	103	128	148	112	137	159	130	155	182
366	5	75/65	485	595	709	527	641	767	611	731	881
		70/55	393	484	573	427	520	619	495	592	710
		55/45	251	310	362	273	333	391	316	378	447
		45/40	173	215	248	188	230	268	218	260	305
514	7	75/65	681	836	996	740	900	1077	858	1026	1237
		70/55	552	679	804	600	731	869	696	832	997
		55/45	353	436	509	383	468	549	443	530	628
		45/40	243	302	349	264	324	376	305	366	429
588	8	75/65	779	956	1139	846	1030	1232	982	1174	1415
		70/55	632	777	920	686	836	994	796	951	1141
		55/45	403	498	582	438	535	628	507	607	719
		45/40	278	345	399	302	370	430	349	418	491
662	9	75/65	876	1076	1282	953	1159	1387	1106	1321	1593
		70/55	711	875	1036	772	941	1119	896	1071	1284
		55/45	454	561	655	493	603	707	571	683	809
		45/40	313	389	449	340	417	484	393	471	552
884	12	75/65	1170	1437	1712	1272	1548	1852	1476	1764	2128
		70/55	949	1168	1383	1032	1257	1495	1196	1430	1715
		55/45	606	749	875	658	805	944	762	912	1080
		45/40	419	519	600	454	557	646	525	629	738
958	13	75/65	1268		1856	1379		2007	1600		2306
		70/55	1029		1499	1118		1620	1296		1859
		55/45	657		948	713		1023	826		1171
		45/40	454		650	492		700	569		799

BASIC TECHNICAL PARAMETERS

Type	K10V	K11V	K20V	K10V	K11V	K20V	K10V	K11V	K20V
	K10VM	K11VM	K20VM	K10VM	K11VM	K20VM	K10VM	K11VM	K20VM
Height **H** [mm]	1100			1200			1400		
Nominal heat output $\mathbf{Q_N}$ [W/m]	1324	1626	1937	1439	1751	2095	1670	1996	2407
Temperature exponent **n** [-]	1,2877	1,2754	1,3142	1,2898	1,2809	1,3184	1,2939	1,2920	1,3266
$\mathbf{K_M}$ [-]	8,5926	11,0727	11,3330	9,2625	11,6701	12,0576	10,5784	12,7377	13,4160

Weight and water volume see page 30.

Characteristic equation: $\Phi = K_M \cdot \Delta T^n \left[\frac{W}{m}\right]$, $\Delta T = \frac{t_1 + t_2}{2} - t_i$ [K]

t_1 – temperature water-in, t_2 – temperature water-out, t_i – relative air temperature

KORATHERM VERTIKAL, VERTIKAL - M

20 °C	Number of profiles i [pcs]	t_1/t_2 [°C]	Type								
			K10V	K11V	K20V	K10V	K11V	K20V	K10V	K11V	K20V
			K10VM	K11VM	K20VM	K10VM	K11VM	K20VM	K10VM	K11VM	K20VM
Height **H** [mm]			1600			1800			2000		
Length **L** [mm]			Heat output Q [W] to EN 442								
144	2	75/65	274	322	391	307	355	435	340	388	478
		70/55	222	261	315	248	288	350	275	314	385
		55/45	141	166	198	158	183	220	175	200	242
		45/40	97	115	135	109	126	150	120	138	165
218	3	75/65	414	487	592	465	538	658	515	587	724
		70/55	336	395	477	376	436	530	417	475	583
		55/45	214	251	300	239	277	334	265	303	367
		45/40	147	173	205	165	191	228	182	208	250
366	5	75/65	695	818	994	780	903	1105	865	985	1215
		70/55	563	663	801	631	731	890	700	798	979
		55/45	359	422	504	402	466	560	445	508	615
		45/40	247	291	344	276	321	382	306	350	420
514	7	75/65	977	1148	1396	1095	1268	1552	1215	1384	1706
		70/55	791	931	1125	887	1027	1250	983	1121	1374
		55/45	504	593	708	564	654	787	625	713	864
		45/40	347	409	483	388	450	537	429	491	589
588	8	75/65	1117	1314	1596	1253	1450	1775	1389	1583	1952
		70/55	905	1065	1286	1015	1175	1430	1124	1282	1572
		55/45	576	678	810	645	748	900	714	816	989
		45/40	397	468	553	444	515	614	491	562	674
662	9	75/65	1258	1479	1797	1411	1632	1999	1564	1782	2198
		70/55	1019	1198	1448	1142	1323	1610	1266	1443	1770
		55/45	649	764	912	726	842	1013	804	919	1113
		45/40	447	526	622	500	580	691	553	632	759
884	12	75/65	1680	1975	2400	1884	2180	2669	2089	2380	2935
		70/55	1360	1600	1934	1525	1766	2150	1691	1927	2364
		55/45	866	1020	1218	970	1125	1353	1074	1227	1487
		45/40	596	703	831	668	775	923	739	845	1013
958	13	75/65	1820		2601	2041		2892	2264		
		70/55	1474		2096	1653		2330	1832		
		55/45	939		1320	1051		1466	1164		
		45/40	646		901	723		1000	800		

BASIC TECHNICAL PARAMETERS

Type	K10V	K11V	K20V	K10V	K11V	K20V	K10V	K11V	K20V
	K10VM	K11VM	K20VM	K10VM	K11VM	K20VM	K10VM	K11VM	K20VM
Height **H** [mm]	1600			1800			2000		
Nominal heat output $\mathbf{Q_N}$ [W/m]	1900	2234	2715	2131	2466	3019	2363	2692	3320
Temperature exponent **n** [-]	1,2966	1,2937	1,3283	1,2993	1,2955	1,3299	1,3020	1,2973	1,3316
$\mathbf{K_M}$ [-]	11,9088	14,1620	15,0324	13,2164	15,5231	16,6113	14,5012	16,8268	18,1464

Weight and water volume see page 30.

Characteristic equation: $\Phi = K_M \cdot \Delta T^n \left[\frac{W}{m}\right]$, $\Delta T = \frac{t_1 + t_2}{2} - t_i$ [K]

t_1 – temperature water-in, t_2 – temperature water-out, t_i – relative air temperature

20 °C	t_1/t_2 [°C]	Type							
		K10H	K11H	K20H	K21H	K22H	K23H	K44H	K46H
							K23HM	K44HM	K46HM
Height **H** [mm]		144							
Number of profiles i [pcs]		2							
Length **L** [mm]		Heat output Q [W] to EN 442							
500	75/65	100	145	159	209	267	290	496	584
	70/55	82	119	131	171	220	238	408	481
	55/45	54	78	86	112	145	157	269	317
	45/40	38	55	61	79	103	111	190	225
600	75/65	119	173	191	250	320	347	595	700
	70/55	98	143	157	205	264	286	490	577
	55/45	65	94	103	134	174	188	322	381
	45/40	46	66	73	94	124	133	228	270
700	75/65	139	202	223	292	374	405	694	817
	70/55	115	166	183	239	308	334	571	673
	55/45	75	109	120	156	203	220	376	444
	45/40	53	77	85	110	144	156	266	315
800	75/65	159	231	254	334	427	463	794	934
	70/55	131	190	209	273	352	381	653	769
	55/45	86	125	137	179	232	251	430	508
	45/40	61	88	97	126	165	178	304	360
900	75/65	179	260	286	375	481	521	893	1050
	70/55	147	214	235	308	396	429	735	865
	55/45	97	140	155	201	261	282	483	571
	45/40	69	99	109	141	185	200	342	405
1000	75/65	199	289	318	417	534	579	992	1167
	70/55	164	238	261	342	440	477	816	961
	55/45	108	156	172	223	290	314	537	635
	45/40	76	110	121	157	206	222	380	450
1100	75/65	219	318	350	459	587	637	1091	1284
	70/55	180	261	288	376	484	524	898	1058
	55/45	118	172	189	246	319	345	591	698
	45/40	84	121	134	173	227	245	418	495
1200	75/65	239	347	382	500	641	695	1190	1400
	70/55	196	285	314	410	528	572	979	1154
	55/45	129	187	206	268	348	377	645	761
	45/40	91	132	146	188	247	267	456	540
1400	75/65	279	405	445	584	748	811	1389	1634
	70/55	229	333	366	479	616	667	1143	1346
	55/45	151	218	240	313	407	439	752	888
	45/40	107	154	170	220	288	311	532	630
1600	75/65	318	462	509	667	854	926	1587	1867
	70/55	262	380	418	547	704	762	1306	1538
	55/45	172	250	275	357	465	502	859	1015
	45/40	122	176	194	251	330	356	608	720
1800	75/65	358	520	572	751	961	1042	1786	2101
	70/55	295	428	471	615	792	858	1469	1730
	55/45	194	281	309	402	523	565	967	1142
	45/40	137	198	218	283	371	400	684	810
2000	75/65	398	578	636	834	1068	1158	1984	2334
	70/55	327	475	523	684	880	953	1632	1923
	55/45	215	312	343	447	581	628	1074	1269
	45/40	152	220	243	314	412	445	760	901
2300	75/65	458	665	731	959	1228	1332	2282	2684
	70/55	376	546	601	786	1012	1096	1877	2211
	55/45	248	359	395	513	668	722	1235	1459
	45/40	175	254	279	361	474	511	875	1036
2600	75/65	517	751	827	1084	1388	1505	2579	3034
	70/55	426	618	680	889	1144	1239	2122	2500
	55/45	280	406	446	580	755	816	1397	1650
	45/40	198	287	316	408	536	578	989	1171
3000	75/65	597	867	954	1251	1602	1737	2976	3501
	70/55	491	713	784	1025	1320	1430	2448	2884
	55/45	323	468	515	670	871	942	1611	1904
	45/40	229	331	364	471	618	667	1141	1351

BASIC TECHNICAL PARAMETERS

Type	K10H	K11H	K20H	K21H	K22H	K23H	K44H	K46H
						K23HM	K44HM	K46HM
Height **H** [mm]	144							
Nominal heat output Q_N [W/m]	199	289	318	417	534	579	992	1167
Temperature exponent **n** [-]	1,2021	1,2072	1,2062	1,2231	1,1926	1,1988	1,2009	1,1927
K_M [-]	1,8052	2,5698	2,8388	3,4844	5,0275	5,3205	9,0410	10,9827

Weight and water volume see page 31–32.

KORATHERM HORIZONTAL, HORIZONTAL - K HORIZONTAL - M, HORIZONTAL VKM

20 °C	t_1/t_2 [°C]	Type							
		K10H	K11H	K20H	K21H	K22H	K23H	K44H	K46H
					K21HK	K22HK	K23HM	K44HM	K46HM
					K21HM	K22HM			
					K21HVKM	K22HVKM			
Height **H** [mm]		218							
Number of profiles i [pcs]		3							
Length **L** [mm]		Heat output Q [W] to EN 442							
500	75/65	133	206	220	291	375	432	705	853
	70/55	109	168	180	238	308	355	578	701
	55/45	72	110	119	155	202	234	377	461
	45/40	51	77	84	109	142	165	265	326
600	75/65	160	247	263	349	449	518	845	1023
	70/55	131	202	217	286	369	426	693	841
	55/45	86	132	142	186	242	280	453	553
	45/40	61	93	101	131	171	199	318	391
700	75/65	186	288	307	407	524	604	986	1194
	70/55	153	236	253	333	431	497	809	981
	55/45	101	154	166	218	282	327	528	645
	45/40	71	108	117	153	199	232	371	456
800	75/65	213	329	351	465	599	690	1127	1364
	70/55	175	270	289	381	492	568	924	1122
	55/45	115	176	190	249	323	374	604	737
	45/40	81	124	134	175	228	265	425	521
900	75/65	239	370	395	523	674	777	1268	1535
	70/55	197	303	325	429	554	639	1040	1262
	55/45	129	198	214	280	363	421	679	829
	45/40	91	139	151	197	256	298	478	586
1000	75/65	266	411	439	581	749	863	1409	1705
	70/55	219	337	361	476	615	710	1155	1402
	55/45	144	220	237	311	403	467	754	922
	45/40	102	155	168	218	285	331	531	652
1100	75/65	293	452	483	639	824	949	1550	1876
	70/55	241	371	397	524	677	781	1271	1542
	55/45	158	242	261	342	444	514	830	1014
	45/40	112	170	185	240	313	364	584	717
1200	75/65	319	493	527	697	899	1036	1691	2046
	70/55	262	404	433	571	738	852	1386	1682
	55/45	172	264	285	373	484	561	905	1106
	45/40	122	186	201	262	342	397	637	782
1400	75/65	372	575	615	813	1049	1208	1973	2387
	70/55	306	472	505	667	861	994	1617	1963
	55/45	201	308	332	435	565	654	1056	1290
	45/40	142	217	235	306	399	463	743	912
1600	75/65	426	658	702	930	1198	1381	2254	2728
	70/55	350	539	578	762	984	1136	1848	2243
	55/45	230	352	380	497	645	748	1207	1474
	45/40	163	248	269	350	456	529	849	1043
1800	75/65	479	740	790	1046	1348	1553	2536	3069
	70/55	394	606	650	857	1107	1278	2079	2523
	55/45	259	396	427	559	726	841	1358	1659
	45/40	183	279	302	393	512	596	955	1173
2000	75/65	532	822	878	1162	1498	1726	2818	3410
	70/55	437	674	722	952	1230	1420	2310	2804
	55/45	287	440	475	622	807	935	1509	1843
	45/40	203	310	336	437	569	662	1061	1303
2300	75/65	612	945	1010	1336	1723	1985	3241	3922
	70/55	503	775	830	1095	1415	1633	2657	3224
	55/45	331	506	546	715	928	1075	1735	2120
	45/40	234	356	386	502	655	761	1221	1499
2600	75/65	692	1069	1141	1511	1947	2244	3663	4433
	70/55	569	876	939	1238	1599	1846	3003	3645
	55/45	374	572	617	808	1049	1215	1962	2396
	45/40	264	402	436	568	740	860	1380	1694
3000	75/65	798	1233	1317	1743	2247	2589	4227	5115
	70/55	656	1011	1083	1428	1845	2130	3465	4206
	55/45	431	660	712	932	1210	1402	2263	2765
	45/40	305	464	503	655	854	993	1592	1955

The models **KORATHERM HORIZONTAL - M, HORIZONTAL - K** and **KORATHERM HORIZONTAL VKM** are available in lengths up to L = 2000 mm

BASIC TECHNICAL PARAMETERS

Type	K10H	K11H	K20H	K21H	K22H	K23H	K44H	K46H
				K21HK	K22HK	K23HM	K44HM	K46HM
				K21HM	K22HM			
				K21HVKM	K22HVKM			
Height **H** [mm]	218							
Nominal heat output Q_N [W/m]	266	411	439	581	749	863	1409	1705
Temperature exponent **n** [-]	1,2049	1,2230	1,2043	1,2250	1,2114	1,2005	1,2228	1,2045
K_M [-]	2,3867	3,4356	3,9482	4,8188	6,5516	7,8777	11,7872	15,3220

Weight and water volume see page 31 – 32.

KORATHERM HORIZONTAL, HORIZONTAL - K HORIZONTAL - M, HORIZONTAL VKM

The models **KORATHERM HORIZONTAL - M, HORIZONTAL - K** and **KORATHERM HORIZONTAL VKM** are available in lengths up to L = 2000 mm

20 °C	t_1/t_2 [°C]	Type											
		K10H	K11H	K20H		K21H	K22H	K10H	K11H	K20H		K21H	K22H
			K11HK		K20HK	K21HK	K22HK		K11HK		K20HK	K21HK	K22HK
			K11HM		K20HM	K21HM	K22HM		K11HM		K20HM	K21HM	K22HM
			K11HVKM		K20HVKM	K21HVKM	K22HVKM		K11HVKM		K20HVKM	K21HVKM	K22HVKM
Height **H** [mm]		366						514					
Number of profiles i [pcs]		5						7					
Length **L** [mm]		Heat output Q [W] to EN 442											
500	75/65	198	319	334	371	436	604	264	424	446	495	564	777
	70/55	162	260	274	304	357	493	216	346	366	404	460	635
	55/45	106	168	181	198	232	319	141	223	240	262	298	413
	45/40	75	117	128	139	163	223	99	155	170	184	208	289
600	75/65	237	383	400	445	523	724	316	509	535	593	677	932
	70/55	195	312	329	364	428	591	259	415	440	485	553	763
	55/45	128	202	217	237	279	383	169	268	288	315	358	496
	45/40	90	141	153	166	196	267	119	186	204	220	250	347
700	75/65	277	447	467	519	610	845	369	594	624	692	790	1088
	70/55	227	364	384	425	499	690	302	484	513	566	645	890
	55/45	149	235	253	277	325	446	197	312	337	367	417	578
	45/40	105	164	179	194	229	312	138	218	238	257	291	405
800	75/65	316	510	534	594	697	966	422	678	714	791	902	1243
	70/55	260	416	439	486	571	788	345	553	586	647	737	1017
	55/45	170	269	289	316	372	510	225	357	385	420	477	661
	45/40	120	187	205	222	261	356	158	249	272	294	333	463
900	75/65	356	574	600	668	784	1086	474	763	803	890	1015	1399
	70/55	292	468	494	547	642	887	389	622	659	728	829	1144
	55/45	192	303	325	356	418	574	253	402	433	472	537	743
	45/40	135	211	230	250	294	401	178	280	305	331	375	521
1000	75/65	395	638	667	742	871	1207	527	848	892	989	1128	1554
	70/55	324	520	549	607	713	985	432	691	733	809	921	1271
	55/45	213	336	361	395	465	638	281	446	481	525	596	826
	45/40	150	234	256	277	327	445	198	311	339	367	416	579
1100	75/65	435	702	734	816	958	1328	580	933	981	1088	1241	1709
	70/55	357	572	604	668	785	1084	475	760	806	889	1013	1398
	55/45	234	370	397	435	511	701	310	491	529	577	656	909
	45/40	165	258	281	305	359	490	217	342	373	404	458	637
1200	75/65	474	766	800	890	1045	1448	632	1018	1070	1187	1354	1865
	70/55	389	624	659	729	856	1182	518	830	879	970	1105	1525
	55/45	255	403	433	475	558	765	338	535	577	630	715	991
	45/40	180	281	307	333	392	534	237	373	407	441	500	694
1400	75/65	553	893	934	1039	1219	1690	738	1187	1249	1385	1579	2176
	70/55	454	728	768	850	999	1379	604	968	1026	1132	1289	1779
	55/45	298	471	506	554	651	893	394	625	673	735	835	1157
	45/40	210	328	358	388	457	623	277	435	475	514	583	810
1600	75/65	632	1021	1067	1187	1394	1931	843	1357	1427	1582	1805	2486
	70/55	519	833	878	972	1141	1576	691	1106	1172	1294	1473	2034
	55/45	341	538	578	633	744	1020	450	714	769	840	954	1322
	45/40	240	375	409	444	522	712	316	497	543	588	666	926
1800	75/65	711	1148	1201	1336	1568	2173	949	1526	1606	1780	2030	2797
	70/55	584	937	988	1093	1284	1773	777	1244	1319	1455	1658	2288
	55/45	383	605	650	712	837	1148	507	803	865	945	1073	1487
	45/40	270	422	460	499	588	801	356	559	611	661	749	1042
2000	75/65	790	1276	1334	1484	1742	2414	1054	1696	1784	1978	2256	3108
	70/55	649	1041	1098	1215	1427	1970	863	1383	1465	1617	1842	2542
	55/45	426	672	722	791	930	1275	563	892	961	1050	1192	1652
	45/40	300	469	511	555	653	890	395	621	679	735	833	1157
2300	75/65	909	1467	1534		2003	2776	1212	1950	2052		2594	3574
	70/55	746	1197	1262		1641	2266	993	1590	1685		2118	2923
	55/45	490	773	831		1069	1467	647	1026	1106		1371	1900
	45/40	346	539	588		751	1024	455	715	781		958	1331
2600	75/65	1027	1659	1734		2265	3138	1370	2205	2319		2933	4040
	70/55	844	1353	1427		1855	2562	1122	1797	1905		2394	3305
	55/45	553	874	939		1209	1658	732	1160	1250		1550	2148
	45/40	391	609	665		849	1157	514	808	882		1082	1505
3000	75/65	1185	1914	2001		2613	3621	1581	2544	2676		3384	
	70/55	973	1561	1646		2140	2956	1295	2074	2198		2763	
	55/45	639	1008	1084		1395	1913	844	1338	1442		1789	
	45/40	451	703	767		980	1336	593	932	1018		1249	

BASIC TECHNICAL PARAMETERS

Type	K10H	K11H	K20H		K21H	K22H	K10H	K11H	K20H		K21H	K22H
		K11HK		K20HK	K21HK	K22HK		K11HK		K20HK	K21HK	K22HK
		K11HM		K20HM	K21HM	K22HM		K11HM		K20HM	K21HM	K22HM
		K11HVKM		K20HVKM	K21HVKM	K22HVKM		K11HVKM		K20HVKM	K21HVKM	K22HVKM
Height **H** [mm]	366						514					
Q_N [W/m]	395	638	667	742	871	1207	527	848	892	989	1128	1554
n [-]	1,2105	1,2546	1,2006	1,2318	1,2288	1,2491	1,2277	1,2573	1,2101	1,2399	1,2482	1,2370
K_M [-]	3,4673	4,7130	6,0861	5,9926	7,1174	9,1101	4,3250	6,1984	7,8423	7,7383	8,5439	12,2977

Weight and water volume see page 31 – 32.

KORATHERM HORIZONTAL, HORIZONTAL - K HORIZONTAL - M, HORIZONTAL VKM

20 °C	t_1/t_2 [°C]	Type											
		K10H	K11H	K20H		K21H	K22H	K10H	K11H	K20H		K21H	K22H
			K11HK		K20HK	K21HK	K22HK		K11HK		K20HK	K21HK	K22HK
			K11HM		K20HM	K21HM	K22HM		K11HM		K20HM	K21HM	K22HM
			K11HVKM		K20HVKM	K21HVKM	K22HVKM		K11HVKM		K20HVKM	K21HVKM	K22HVKM
Height **H** [mm]		588						662					
Number of profiles i [pcs]		8						9					
Length **L** [mm]		Heat output Q [W] to EN 442											
500	75/65	298	475	503	556	624	854	333	524	560	618	680	927
	70/55	243	387	413	454	508	699	272	427	459	504	553	759
	55/45	158	249	270	295	328	455	176	275	300	326	356	496
	45/40	111	174	191	206	228	320	123	192	211	228	247	348
600	75/65	357	569	604	667	748	1025	400	629	672	741	816	1112
	70/55	292	464	495	545	610	839	326	512	551	605	664	911
	55/45	190	299	325	353	394	546	212	330	360	392	427	595
	45/40	133	208	229	247	274	384	148	230	254	274	297	418
700	75/65	417	664	704	778	873	1196	466	734	784	865	952	1297
	70/55	341	541	578	636	712	979	381	598	643	706	775	1063
	55/45	221	349	379	412	459	638	247	385	421	457	498	694
	45/40	155	243	267	288	320	447	173	268	296	319	346	488
800	75/65	476	759	805	890	998	1366	533	838	896	988	1088	1482
	70/55	389	619	661	727	813	1119	435	683	735	807	885	1215
	55/45	253	399	433	471	525	729	282	440	481	522	569	793
	45/40	177	278	305	329	365	511	197	307	338	365	395	557
900	75/65	536	854	905	1001	1122	1537	599	943	1008	1112	1224	1668
	70/55	438	696	743	818	915	1258	490	769	827	907	996	1367
	55/45	285	449	487	530	590	820	317	496	541	588	641	892
	45/40	200	313	343	371	411	575	222	345	381	410	445	627
1000	75/65	595	949	1006	1112	1247	1708	666	1048	1120	1235	1360	1853
	70/55	487	773	826	908	1016	1398	544	854	919	1008	1107	1519
	55/45	316	499	541	589	656	911	353	551	601	653	712	991
	45/40	222	347	381	412	457	639	246	383	423	456	494	697
1100	75/65	655	1044	1107	1223	1372	1879	733	1153	1232	1359	1496	2038
	70/55	535	851	908	999	1118	1538	598	939	1011	1109	1218	1670
	55/45	348	549	595	648	721	1002	388	606	661	718	783	1090
	45/40	244	382	419	453	502	703	271	422	465	502	544	767
1200	75/65	714	1139	1207	1334	1496	2050	799	1258	1344	1482	1632	2224
	70/55	584	928	991	1090	1220	1678	653	1025	1102	1210	1328	1822
	55/45	380	599	649	707	787	1093	423	661	721	783	854	1189
	45/40	266	417	458	494	548	767	296	460	508	547	593	836
1400	75/65	833	1329	1408	1557	1746	2391	932	1467	1568	1729	1904	2594
	70/55	681	1083	1156	1272	1423	1958	762	1196	1286	1412	1550	2126
	55/45	443	698	757	825	918	1275	494	771	841	914	996	1388
	45/40	310	486	534	577	639	895	345	536	592	638	692	976
1600	75/65	952	1518	1610	1779	1995	2733	1066	1677	1792	1976	2176	2965
	70/55	779	1238	1321	1454	1626	2237	870	1366	1470	1613	1771	2430
	55/45	506	798	865	942	1049	1457	564	881	961	1045	1139	1586
	45/40	355	556	610	659	731	1023	394	613	677	730	791	1115
1800	75/65	1071	1708	1811	2002	2245	3074	1199	1886	2016	2223	2448	3335
	70/55	876	1392	1486	1635	1830	2517	979	1537	1654	1815	1992	2733
	55/45	570	898	974	1060	1181	1639	635	991	1081	1175	1281	1784
	45/40	399	625	686	741	822	1151	444	690	761	821	890	1254
2000	75/65	1190	1898	2012	2224	2494	3416	1332	2096	2240	2470	2720	3706
	70/55	973	1547	1652	1817	2033	2797	1088	1708	1837	2017	2214	3037
	55/45	633	998	1082	1178	1312	1822	705	1101	1201	1306	1424	1982
	45/40	443	695	763	824	913	1278	493	766	846	912	989	1394
2300	75/65	1369	2183	2314		2868	3928	1532	2410	2576		3128	
	70/55	1119	1779	1899		2338	3216	1251	1964	2113		2546	
	55/45	728	1148	1244		1509	2095	811	1266	1382		1637	
	45/40	510	799	877		1051	1470	567	881	973		1137	
2600	75/65	1547	2467	2616		3242		1732	2725	2912			
	70/55	1265	2011	2147		2643		1414	2220	2388			
	55/45	823	1297	1406		1705		917	1432	1562			
	45/40	576	903	992		1188		641	996	1100			
3000	75/65	1785	2847	3018				1998	3144				
	70/55	1460	2320	2477				1632	2562				
	55/45	949	1497	1623				1058	1652				
	45/40	665	1042	1144				739	1150				

The models **KORATHERM HORIZONTAL - M, HORIZONTAL - K** and **KORATHERM HORIZONTAL VKM** are available in lengths up to L = 2000 mm

BASIC TECHNICAL PARAMETERS

Type	K10H	K11H	K20H		K21H	K22H	K10H	K11H	K20H		K21H	K22H
		K11HK		K20HK	K21HK	K22HK		K11HK		K20HK	K21HK	K22HK
		K11HM		K20HM	K21HM	K22HM		K11HM		K20HM	K21HM	K22HM
		K11HVKM		K20HVKM	K21HVKM	K22HVKM		K11HVKM		K20HVKM	K21HVKM	K22HVKM
Height **H** [mm]	588						662					
Q_N [W/m]	595	949	1006	1112	1247	1708	666	1048	1120	1235	1360	1853
n [-]	1,2363	1,2587	1,2148	1,2439	1,2578	1,2309	1,2450	1,2600	1,2195	1,2479	1,2675	1,2248
K_M [-]	4,7215	6,8988	8,6834	8,5656	9,0971	13,8429	5,1081	7,5798	9,4913	9,3653	9,5520	15,3807

Weight and water volume see page 31 – 32.

KORATHERM HORIZONTAL, HORIZONTAL - K HORIZONTAL - M, HORIZONTAL VKM

20 °C	t_1/t_2 [°C]	Type										
		K10H	K11H K11HK K11HM K11HVKM	K20H	K20HK K20HM K20HVKM	K21H K21HK K21HM K21HVKM	K22H K22HK K22HM K22HVKM	K10H	K11H	K20H	K21H	K22H
Height **H** [mm]		884						958				
Number of profiles i [pcs]		12						13				
Length **L** [mm]		Heat output Q [W] to EN 442										
500	75/65	449	666	738	805	837	1119	491	712	800	886	1176
	70/55	366	540	605	660	680	914	400	576	655	719	959
	55/45	236	344	394	430	436	592	258	366	427	460	619
	45/40	164	238	277	303	302	413	179	252	299	318	431
600	75/65	539	799	886	966	1004	1343	589	854	959	1063	1411
	70/55	439	648	725	792	816	1096	480	691	786	863	1150
	55/45	283	413	473	517	523	710	309	439	512	552	743
	45/40	197	285	332	363	362	496	215	302	359	382	518
700	75/65	629	932	1033	1127	1172	1567	687	996	1119	1240	1646
	70/55	512	756	846	923	952	1279	560	806	916	1007	1342
	55/45	331	482	552	603	610	828	361	513	597	644	867
	45/40	230	333	388	424	422	579	251	353	419	445	604
800	75/65	718	1066	1181	1288	1339	1790	786	1138	1279	1417	1881
	70/55	586	864	967	1055	1088	1462	640	921	1047	1150	1534
	55/45	378	551	631	689	697	947	412	586	682	736	991
	45/40	263	380	443	484	483	661	287	403	479	509	690
900	75/65	808	1199	1328	1449	1507	2014	884	1281	1439	1594	2116
	70/55	659	972	1088	1187	1224	1645	720	1037	1178	1294	1725
	55/45	425	620	710	775	784	1065	464	659	768	828	1114
	45/40	296	428	499	545	543	744	323	453	539	573	777
1000	75/65	898	1332	1476	1610	1674	2238	982	1423	1599	1771	2351
	70/55	732	1080	1209	1319	1360	1827	800	1152	1309	1438	1917
	55/45	472	689	788	861	871	1183	515	732	853	920	1238
	45/40	329	475	554	605	603	826	358	504	599	636	863
1100	75/65	988	1465	1624	1771	1841	2462	1080	1565	1759	1948	2586
	70/55	805	1188	1330	1451	1496	2010	880	1267	1440	1582	2109
	55/45	519	758	867	947	958	1302	567	805	938	1012	1362
	45/40	362	523	609	666	664	909	394	554	659	700	949
1200	75/65	1078	1598	1771	1932	2009	2686	1178	1708	1919	2125	2821
	70/55	878	1296	1451	1583	1632	2193	960	1382	1571	1726	2301
	55/45	567	827	946	1033	1046	1420	618	879	1024	1104	1486
	45/40	395	570	665	726	724	992	430	604	719	764	1035
1400	75/65	1257	1865	2066	2254	2344	3133	1375	1992	2239	2479	3291
	70/55	1025	1512	1693	1847	1904	2558	1120	1613	1833	2013	2684
	55/45	661	965	1104	1205	1220	1657	721	1025	1194	1288	1733
	45/40	460	665	775	847	844	1157	502	705	838	891	1208
1600	75/65	1437	2131	2362	2576	2678		1571	2277	2558	2834	
	70/55	1171	1728	1935	2111	2176		1280	1843	2095	2301	
	55/45	756	1102	1262	1377	1394		824	1172	1365	1472	
	45/40	526	760	886	968	965		573	806	958	1018	
1800	75/65	1616	2398	2657	2898	3013		1768	2561	2878		
	70/55	1318	1944	2176	2375	2448		1440	2073	2357		
	55/45	850	1240	1419	1550	1568		928	1318	1535		
	45/40	592	856	997	1089	1086		645	907	1078		
2000	75/65	1796	2664	2952	3220			1964	2846			
	70/55	1464	2160	2418	2638			1600	2304			
	55/45	945	1378	1577	1722			1031	1464			
	45/40	658	951	1108	1210			717	1007			
2300	75/65	2065	3064					2259	3273			
	70/55	1684	2484					1840	2649			
	55/45	1086	1585					1185	1684			
	45/40	756	1093					824	1158			
2600	75/65	2335	3463					2553	3700			
	70/55	1903	2808					2080	2995			
	55/45	1228	1791					1340	1904			
	45/40	855	1236					932	1310			
3000	75/65	2694	3996					2946				
	70/55	2196	3240					2400				
	55/45	1417	2067					1546				
	45/40	987	1426					1075				

The models **KORATHERM HORIZONTAL - M, HORIZONTAL - K** and **KORATHERM HORIZONTAL VKM** are available in lengths up to L = 2000 mm

BASIC TECHNICAL PARAMETERS

Type	K10H	K11H K11HK K11HM K11HVKM	K20H	K20HK K20HM K20HVKM	K21H K21HK K21HM K21HVKM	K22H K22HK K22HM K22HVKM	K10H	K11H	K20H	K21H	K22H
Height **H** [mm]	884						958				
Q_N [W/m]	898	1332	1476	1610	1674	2238	982	1423	1599	1771	2351
n [-]	1,2580	1,2905	1,2274	1,2256	1,2783	1,2476	1,2624	1,3007	1,2300	1,2819	1,2552
K_M [-]	6,5459	8,5503	12,1275	13,3220	11,2710	16,9912	7,0361	8,7772	13,0051	11,7573	17,3263

Weight and water volume see page 31 – 32.

KORATHERM VERTIKAL, VERTIKAL - M

RADIATOR WEIGHT M_T [kg]

Type	K10V, K10VM											
Height **H** [mm]	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000
Length **L** [mm]	Radiator weight M_T [kg]											
144	3,2	3,8	4,2	4,8	5,3	5,8	6,3	6,8	7,9	8,9	9,9	11,0
218	4,4	5,1	5,7	6,5	7,2	7,9	8,6	9,3	10,7	12,1	13,5	14,9
366	6,7	7,8	8,7	9,9	11,0	12,1	13,2	14,2	16,4	18,6	20,7	22,8
514	9,0	10,5	11,7	13,3	14,8	16,3	17,7	19,2	22,1	25,0	27,9	30,7
588	10,2	11,9	13,1	15,1	16,7	18,4	20,0	21,6	24,9	28,3	31,4	34,6
662	11,3	13,2	14,6	16,8	18,6	20,5	22,3	24,1	27,7	31,5	35,0	38,6
884	14,6	17,0	18,9	21,7	24,0	26,6	28,9	31,2	36,0	40,9	45,5	50,2
958	15,7	18,4	20,4	23,4	25,9	28,7	31,2	33,7	38,8	44,1	49,1	54,1

Type	K11V, K11VM											
Height **H** [mm]	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000
Length **L** [mm]	Radiator weight M_T [kg]											
144	3,6	4,4	4,8	5,7	6,2	7,0	7,5	7,7	8,7	10,1	11,1	12,4
218	4,9	6,2	6,7	8,0	8,7	9,9	10,6	10,7	12,1	14,1	15,4	17,3
366	7,6	9,6	10,4	12,5	13,5	15,4	16,4	16,6	18,8	21,8	23,9	26,8
514	10,3	12,9	14,1	16,9	18,3	20,9	22,3	22,5	25,4	29,5	32,3	36,3
588	11,6	14,6	15,9	19,1	20,7	23,6	25,2	25,5	28,7	33,4	36,6	41,0
662	13,0	16,3	17,7	21,3	23,1	26,4	28,1	28,4	32,0	37,3	40,8	45,8
884	16,7	21,2	23,0	27,8	30,1	34,4	36,7	37,0	41,7	48,6	53,2	59,8
958	18,1	22,9	24,8	30,0	32,5							

Type	K20V, K20VM											
Height **H** [mm]	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000
Length **L** [mm]	Radiator weight M_T [kg]											
144	5,2	6,2	6,9	7,9	8,8	9,6	10,5	11,4	13,2	14,9	16,7	18,4
218	7,3	8,7	9,7	11,2	12,4	13,7	14,9	16,1	18,7	21,1	23,6	26,1
366	11,6	13,9	15,4	17,8	19,8	21,7	23,7	25,6	29,7	33,6	37,5	41,4
514	15,9	19,0	21,2	24,4	27,1	29,8	32,4	35,1	40,6	46,0	51,4	56,7
588	18,0	21,6	24,0	27,7	30,7	33,8	36,8	39,9	46,1	52,2	58,3	64,4
662	21,6	27,0	29,7	35,3	38,7	43,5	46,9	48,9	55,9	64,2	71,0	79,2
884	28,2	35,4	38,9	46,3	50,7	57,1	61,6	64,2	73,5	84,4	93,4	104,3
958	30,6	38,2	42,1	50,0	54,9	61,8	66,7	69,5	79,4	91,2	100,9	

WATER VOLUME V_T [l]

Type	K10V, K10VM, K11V, K11VM											
Height **H** [mm]	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000
Length **L** [mm]	Water volume V_T [l]											
144	0,9	1,0	1,1	1,2	1,3	1,4	1,6	1,7	1,9	2,1	2,4	2,6
218	1,3	1,5	1,6	1,8	2,0	2,1	2,3	2,5	2,8	3,1	3,5	3,8
366	2,2	2,5	2,7	3,0	3,3	3,5	3,8	4,1	4,6	5,2	5,7	6,3
514	3,0	3,4	3,8	4,2	4,6	4,9	5,3	5,7	6,4	7,2	8,0	8,7
588	3,5	3,9	4,3	4,8	5,2	5,6	6,1	6,5	7,4	8,2	9,1	9,9
662	3,9	4,4	4,9	5,4	5,8	6,3	6,8	7,3	8,3	9,2	10,2	11,2
884	5,0	5,7	6,3	7,0	7,6	8,3	8,9	9,5	10,8	12,1	13,4	14,7
958	5,5	6,2	6,9	7,6	8,3	9,0	9,6	10,3	11,7	13,1	14,5	15,9

Type	K20V, K20VM											
Height **H** [mm]	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000
Length **L** [mm]	Water volume V_T [l]											
144	1,4	1,6	1,9	2,1	2,3	2,5	2,7	2,9	3,4	3,8	4,3	4,7
218	2,1	2,4	2,8	3,1	3,4	3,7	4,1	4,4	5,0	5,7	6,3	7,0
366	3,5	4,0	4,6	5,1	5,7	6,2	6,7	7,3	8,3	9,4	10,5	11,6
514	4,9	5,6	6,4	7,1	7,9	8,6	9,4	10,1	11,6	13,1	14,6	16,1
588	5,6	6,5	7,3	8,2	9,0	9,9	10,7	11,6	13,3	15,0	16,7	18,4
662	6,3	7,3	8,2	9,2	10,1	11,1	12,1	13,0	14,9	16,9	18,8	20,7
884	8,2	9,5	10,8	12,1	13,3	14,6	15,9	17,2	19,7	22,3	24,9	27,4
958	8,9	10,3	11,7	13,1	14,5	15,8	17,2	18,6	21,4	24,2	26,9	

KORATHERM HORIZONTAL, HORIZONTAL - M, HORIZONTAL VKM

RADIATOR WEIGHT M_T [kg]

Type	K10H								K11H, K11HK, K11HM, K11HVKM							
Height **H** [mm]	144	218	366	514	588	662	884	958	144	218	366	514	588	662	884	958
Length **L** [mm]	Radiator weight M_T [kg]															
500	3,2	4,3	6,6	8,9	10,0	11,2	14,4	15,5	3,3	4,8	7,8	10,8	12,3	13,8	18,1	19,6
600	3,6	5,0	7,7	10,3	11,7	13,0	16,8	18,1	3,9	5,6	9,1	12,7	14,4	16,2	21,2	23,0
700	4,0	5,5	8,5	11,4	12,9	14,4	18,6	20,1	4,4	6,4	10,5	14,6	16,7	18,7	24,7	26,7
800	4,5	6,2	9,6	13,1	14,8	16,5	21,3	23,0	5,0	7,3	12,0	16,7	19,0	21,4	28,2	30,5
900	5,0	6,9	10,6	14,4	16,3	18,2	23,6	25,5	5,6	8,2	13,6	18,9	21,6	24,3	32,1	34,8
1000	5,5	7,6	11,7	15,9	18,0	20,1	26,1	28,2	6,1	9,1	14,9	20,8	23,8	26,7	35,3	38,3
1100	5,9	8,2	12,7	17,3	19,5	21,8	28,4	30,6	6,7	10,0	16,5	23,0	26,3	29,5	39,1	42,3
1200	6,4	8,8	13,7	18,6	21,1	23,5	30,6	33,1	7,2	10,7	17,8	24,9	28,4	31,9	42,3	45,8
1400	7,3	10,1	15,8	21,4	24,3	27,1	35,3	38,1	8,3	12,5	20,7	29,0	33,1	37,2	49,4	53,5
1600	8,3	11,5	17,9	24,3	27,5	30,7	40,1	43,3	9,4	14,1	23,5	32,9	37,6	42,3	56,1	60,8
1800	9,3	12,9	20,0	27,2	30,8	34,3	44,8	48,4	10,6	15,9	26,5	37,0	42,3	47,6	63,2	68,4
2000	10,2	14,2	22,0	29,9	33,8	37,8	49,3	53,3	11,7	17,6	29,3	41,1	46,9	52,8	70,1	76,0
2300	11,6	16,1	25,0	34,0	38,5	43,0	56,1	60,6	13,5	20,2	33,8	47,4	54,2	61,0	81,0	87,8
2600	13,0	18,0	28,2	38,3	43,3	48,4	63,3	68,4	15,1	22,7	38,0	53,3	61,0	68,6	91,3	99,0
3000	14,8	20,6	32,2	43,7	49,5	55,3	72,4	78,2	17,3	26,1	43,8	61,4	70,2	79,0	105,2	

Type	K20H, K20HK, K20HM, K20HVKM								K21H, K21HK, K21HM, K21HVKM							
Height **H** [mm]	144	218	366	514	588	662	884	958	144	218	366	514	588	662	884	958
Length **L** [mm]	Radiator weight M_T [kg]															
500	5,0	7,1	11,4	15,7	17,8	20,0	26,1	28,2	5,3	7,7	12,6	17,5	19,9	22,4	29,4	31,9
600	5,9	8,4	13,4	18,5	21,0	23,5	30,8	33,3	6,2	9,1	14,9	20,7	23,5	26,4	34,9	37,8
700	6,5	9,3	14,9	20,5	23,3	26,1	34,2	37,0	7,0	10,3	16,9	23,6	26,9	30,2	39,9	43,3
800	7,5	10,7	17,2	23,7	26,9	30,2	39,6	42,9	8,0	11,9	19,5	27,2	31,0	34,9	46,1	49,9
900	8,3	11,9	19,1	26,3	29,9	33,5	44,0	47,7	9,0	13,3	22,0	30,7	35,0	39,4	52,1	56,5
1000	9,2	13,2	21,2	29,2	33,2	37,2	48,9	52,9	9,9	14,7	24,3	34,0	38,8	43,6	57,7	62,5
1100	10,0	14,3	23,1	31,8	36,2	40,6	53,4	57,7	10,9	16,2	26,8	37,3	42,6	47,9	63,5	68,8
1200	10,8	15,5	25,0	34,5	39,2	43,9	57,8	62,5	11,7	17,5	29,0	40,5	46,2	52,0	68,9	74,7
1400	12,4	17,9	28,9	39,8	45,3	50,8	66,9	72,4	13,6	20,3	33,7	47,2	53,9	60,6	80,4	87,1
1600	14,1	20,4	32,9	45,4	51,6	57,9	76,2	82,4	15,5	23,1	38,4	53,7	61,4	69,0	91,6	99,3
1800	15,8	22,8	36,7	50,7	57,7	64,6	85,1	92,1	17,4	26,0	43,2	60,3	68,9	77,5	102,9	
2000	17,4	25,1	40,5	55,9	63,6	71,3	94,0		19,2	28,8	47,8	66,9	76,4	85,9		
2300	19,9	28,8	46,4	64,1	72,9	81,7			22,1	33,1	55,0	77,0	88,0	99,0		
2600	22,4	32,3	52,2	72,1	82,0	91,9			24,8	37,2	62,0	86,8	99,2			
3000	25,6	37,0	59,8	82,5	93,9				28,5	42,8	71,3	99,9				

Type	K22H, K22HK, K22HM, K22HVKM								K23H, K23HM		K44H, K44HM		K46H, K46HM	
Height **H** [mm]	144	218	366	514	588	662	884	958	144	218	144	218	144	218
Length **L** [mm]	Radiator weight M_T [kg]													
500	6,4	9,4	15,5	21,5	24,6	27,6	36,2	39,3	7,0	10,5	13,5	19,6	14,9	21,8
600	7,4	10,9	18,1	25,2	28,7	32,3	42,5	46,0	8,2	12,2	15,6	22,7	17,2	25,2
700	8,4	12,5	20,8	29,0	33,2	37,3	49,2	53,3	9,3	14,1	17,5	25,8	19,5	29,0
800	9,5	14,2	23,7	33,1	37,8	42,5	56,2	60,9	10,6	16,0	19,8	29,3	22,1	32,9
900	10,7	16,0	26,8	37,5	42,9	48,3	63,8	69,2	12,0	18,2	22,1	32,9	24,7	37,1
1000	11,7	17,7	29,5	41,3	47,2	53,1	70,3	76,2	13,2	20,0	24,3	36,1	27,1	40,7
1100	12,9	19,4	32,5	45,6	52,1	58,7	77,7	84,2	14,5	22,0	26,6	39,7	29,7	44,8
1200	13,9	20,9	35,1	49,2	56,3	63,3	84,0	91,0	15,6	23,8	28,5	42,7	32,0	48,4
1400	16,0	24,3	40,8	57,2	65,5	73,7	97,9	106,1	18,1	27,6	32,9	49,4	36,9	56,1
1600	18,2	27,6	46,3	65,1	74,4	83,8			20,5	31,4	37,2	56,0	41,8	63,6
1800	20,4	30,9	52,0	73,0	83,6	94,1			23,0	35,3	41,7	62,7	46,8	71,4
2000	22,6	34,2	57,6	81,0	92,6	104,3			25,5	39,1	45,9	69,3	51,7	79,0
2300	25,9	39,4	66,5	93,5	107,0				29,3	45,1	52,7	79,7	59,4	91,0
2600	29,1	44,3	74,7	105,1					32,9	50,7	59,0	89,4	66,6	102,2
3000	33,4	50,9	85,9						37,8	58,3	67,6	102,6	76,4	117,5

The models **KORATHERM HORIZONTAL - M, HORIZONTAL - K** and **KORATHERM HORIZONTAL VKM** are available in lengths up to L = 2000 mm

KORATHERM HORIZONTAL, HORIZONTAL - M, HORIZONTAL VKM

WATER VOLUME V_T [l]

Type	K10H								K11H, K11HK, K11HM, K11HVKM							
Height **H** [mm]	144	218	366	514	588	662	884	958	144	218	366	514	588	662	884	958
Length **L** [mm]	Water volume V_T [l]															
500	0,9	1,3	2,2	3,1	3,5	3,9	5,0	5,5	0,9	1,3	2,2	3,1	3,5	3,9	5,0	5,5
600	1,0	1,5	2,5	3,4	3,9	4,4	5,7	6,2	1,0	1,5	2,5	3,4	3,9	4,4	5,7	6,2
700	1,1	1,7	2,7	3,8	4,4	4,9	6,3	6,9	1,1	1,7	2,7	3,8	4,4	4,9	6,3	6,9
800	1,3	1,8	3,0	4,2	4,8	5,4	7,0	7,6	1,3	1,8	3,0	4,2	4,8	5,4	7,0	7,6
900	1,4	2,0	3,3	4,6	5,2	5,9	7,6	8,3	1,4	2,0	3,3	4,6	5,2	5,9	7,6	8,3
1000	1,5	2,2	3,6	5,0	5,6	6,3	8,3	9,0	1,5	2,2	3,6	5,0	5,6	6,3	8,3	9,0
1100	1,6	2,3	3,8	5,3	6,1	6,8	8,9	9,7	1,6	2,3	3,8	5,3	6,1	6,8	8,9	9,7
1200	1,7	2,5	4,1	5,7	6,5	7,3	9,5	10,3	1,7	2,5	4,1	5,7	6,5	7,3	9,5	10,3
1400	1,9	2,8	4,7	6,5	7,4	8,3	10,8	11,7	1,9	2,8	4,7	6,5	7,4	8,3	10,8	11,7
1600	2,2	3,2	5,2	7,2	8,2	9,2	12,1	13,1	2,2	3,2	5,2	7,2	8,2	9,2	12,1	13,1
1800	2,4	3,5	5,7	8,0	9,1	10,2	13,4	14,5	2,4	3,5	5,7	8,0	9,1	10,2	13,4	14,5
2000	2,6	3,8	6,3	8,7	10,0	11,2	14,7	15,9	2,6	3,8	6,3	8,7	10,0	11,2	14,7	15,9
2300	3,0	4,3	7,1	9,9	11,3	12,6	16,6	18,0	3,0	4,3	7,1	9,9	11,3	12,6	16,6	18,0
2600	3,3	4,8	7,9	11,0	12,5	14,1	18,6	20,1	3,3	4,8	7,9	11,0	12,5	14,1	18,6	20,1
3000	3,7	5,5	9,0	12,5	14,3	16,0	21,1	22,9	3,7	5,5	9,0	12,5	14,3	16,0	21,1	

Type	K20H, K20HK, K20HM, K20HVKM								K21H, K21HK, K21HM, K21HVKM							
Height **H** [mm]	144	218	366	514	588	662	884	958	144	218	366	514	588	662	884	958
Length **L** [mm]	Water volume V_T [l]															
500	1,4	2,1	3,5	4,9	5,6	6,3	8,2	8,9	1,4	2,1	3,5	4,9	5,6	6,3	8,2	8,9
600	1,7	2,5	4,1	5,7	6,5	7,3	9,5	10,3	1,7	2,5	4,1	5,7	6,5	7,3	9,5	10,3
700	1,9	2,8	4,6	6,4	7,3	8,2	10,8	11,7	1,9	2,8	4,6	6,4	7,3	8,2	10,8	11,7
800	2,1	3,1	5,1	7,2	8,2	9,2	12,1	13,1	2,1	3,1	5,1	7,2	8,2	9,2	12,1	13,1
900	2,3	3,4	5,7	7,9	9,0	10,2	13,3	14,5	2,3	3,4	5,7	7,9	9,0	10,2	13,3	14,5
1000	2,5	3,8	6,2	8,7	9,9	11,1	14,6	15,8	2,5	3,8	6,2	8,7	9,9	11,1	14,6	15,8
1100	2,8	4,1	6,8	9,4	10,7	12,1	15,9	17,2	2,8	4,1	6,8	9,4	10,7	12,1	15,9	17,2
1200	3,0	4,4	7,3	10,2	11,6	13,0	17,2	18,6	3,0	4,4	7,3	10,2	11,6	13,0	17,2	18,6
1400	3,4	5,1	8,4	11,7	13,3	15,0	19,7	21,4	3,4	5,1	8,4	11,7	13,3	15,0	19,7	21,4
1600	3,9	5,7	9,4	13,2	15,0	16,9	22,3	24,2	3,9	5,7	9,4	13,2	15,0	16,9	22,3	24,2
1800	4,3	6,4	10,5	14,7	16,7	18,8	24,9	26,9	4,3	6,4	10,5	14,7	16,7	18,8	24,9	
2000	4,7	7,0	11,6	16,2	18,4	20,7	27,4		4,7	7,0	11,6	16,2	18,4	20,7		
2300	5,4	8,0	13,2	18,4	21,0	23,6			5,4	8,0	13,2	18,4	21,0	23,6		
2600	6,0	9,0	14,8	20,7	23,6	26,5			6,0	9,0	14,8	20,7	23,6			
3000	6,9	10,3	17,0	23,6	27,0				6,9	10,3	17,0	23,6				

Type	K22H, K22HK, K22HM, K22HVKM								K23H, K23HM		K44H, K44HM		K46H, K46HM	
Height **H** [mm]	144	218	366	514	588	662	884	958	144	218	144	218	144	218
Length **L** [mm]	Water volume V_T [l]													
500	1,8	2,6	4,3	6,1	6,9	7,8	10,0	10,9	1,8	2,6	3,5	5,2	3,5	5,2
600	2,0	2,9	4,9	6,8	7,8	8,7	11,3	12,3	2,0	2,9	4,0	5,9	4,0	5,9
700	2,2	3,3	5,4	7,6	8,6	9,7	12,6	13,7	2,2	3,3	4,4	6,5	4,4	6,5
800	2,4	3,6	6,0	8,3	9,5	10,7	13,9	15,0	2,4	3,6	4,8	7,2	4,8	7,2
900	2,6	3,9	6,5	9,1	10,3	11,6	15,1	16,4	2,6	3,9	5,3	7,8	5,3	7,8
1000	2,9	4,2	7,0	9,8	11,2	12,6	16,4	17,8	2,9	4,2	5,7	8,5	5,7	8,5
1100	3,1	4,6	7,6	10,6	12,0	13,5	17,7	19,2	3,1	4,6	6,2	9,2	6,2	9,2
1200	3,3	4,9	8,1	11,3	12,9	14,5	19,0	20,6	3,3	4,9	6,6	9,8	6,6	9,8
1400	3,7	5,6	9,2	12,8	14,6	16,4	21,5	23,4	3,7	5,6	7,5	11,1	7,5	11,1
1600	4,2	6,2	10,3	14,3	16,3	18,4			4,2	6,2	8,4	12,4	8,4	12,4
1800	4,6	6,9	11,3	15,8	18,0	20,3			4,6	6,9	9,2	13,7	9,2	13,7
2000	5,1	7,5	12,4	17,3	19,7	22,2			5,1	7,5	10,1	15,0	10,1	15,0
2300	5,7	8,5	14,0	19,5	22,3				5,7	8,5	11,4	17,0	11,4	17,0
2600	6,4	9,5	15,6	21,8					6,4	9,5	12,7	18,9	12,7	18,9
3000	7,2	10,8	17,8						7,2	10,8	14,5	21,5	14,5	21,5

The models **KORATHERM HORIZONTAL - M, HORIZONTAL - K** and **KORATHERM HORIZONTAL VKM** are available in lengths up to L = 2000 mm

PRESSURE LOSSES

Type	K10V K11V K10R	K20V K20R	K10VM K11VM	K20VM	K10H K11H	K20H K21H K22H K23H	K11HK	K20HK K21HK K22HK	K11HM	K20HM K21HM K22HM K23HM	K44H K46H	K44HM K46HM
Flow coefficient A_T [m²]	$1,2 \times 10^{-4}$	$7,9 \times 10^{-5}$	$2,16 \times 10^{-5}$	$3,31 \times 10^{-8}$	$1,2 \times 10^{-4}$	$7,22 \times 10^{-5}$	$3,00 \times 10^{-5}$	$3,30 \times 10^{-5}$	$2,44 \times 10^{-5}$	$2,76 \times 10^{-5}$	$5,29 \times 10^{-5}$	$4,18 \times 10^{-5}$
Coefficient of resistance ξ_T [-]	5,6	12,9	173,5	73,8	5,6	15,5	89,8	74,2	135,3	105,7	28,9	46,3

Mounting on the wall

KORATHERM design radiators have two upper and two lower clips welded to the back of the radiator, with the exception of models 10, 11, and 20 with a length of L = 144 mm, where there is only one upper and one lower clip. The HORIZONTAL version with a length of L = 1800 mm or longer has six welded clips.

The minimum number of the brackets shown in this catalogue under individual bracket types has been determined by calculating the weight of the radiator, the heat-transfer agent, plus an added „random load weight" of 80 kg. When choosing another type of bracket than the one mentioned in the catalogue, it is necessary to check the maximum vertical load allowed for the bracket. The necessary information about the maximum vertical load for individual brackets is listed in the KORAMONT catalogue.

18/120 Drill-in Bracket

For mounting the KORATHERM HORIZONTAL radiators on the wall, we recommend using the 18/120 drill-in bracket (Order No. Z-U144).

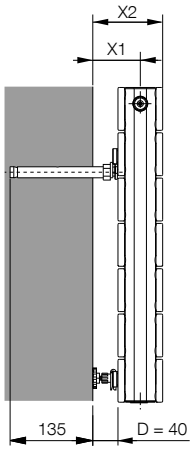
- The set includes two brackets and two supports
- The set allows wall mounting at a distance of D = 35 ÷ 65 mm from the wall, at the distance D = 65 ÷ 80 mm, it is also necessary to use the bracket (not the support) for the lower line
- Metal parts are galvanized
- Preferably for use on walls made from solid or perforated bricks or cellular concrete
- For drilling into walls, it is necessary to use a ∅ 18 mm drill bit
- Maximum vertical load of the bracket is **1000 N** at **D = 50 mm**

Number of Brackets

For mounting the radiators, it is always necessary to use a minimum of two 18/120 drill-in brackets; for radiators 1800 mm in length or longer, use a minimum of three brackets.

Type	Order number
Drill-in Bracket 18/120	Z - U144

Positioning



Type	K10V K10VM K10H K10R	K11V K11VM K11H K11HK K11HM K11HVKM	K20V K20VM K20H K20HK K20HM K20R K20HVKM	K21H K21HK K21HM K21HVKM	K22H K22HK K22HM K22HVKM
X1 [mm]	63	63	76	76	75
X2 [mm]	99	99	112	112	155

Values **X1** and **X2** are dependent on the type of fixing bracket actually used.

VERTIKAL Split Bracket

For mounting the KORATHERM VERTIKAL and REFLEX radiators, it is recommended to use preferentially the VERTIKAL split bracket (Order No. Z-U558), which is included in a standard delivery.

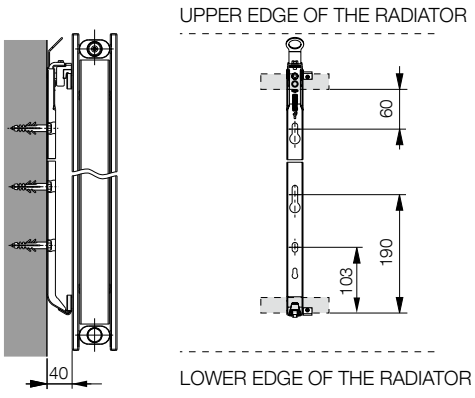
- Set includes: 2× bracket, screws 7×60 mm, dowels plugs ∅ 10 mm, 4×safety catch against lifting and move
- Designed for all models and types with welded clips with radiator heights **H = 500 mm** and higher
- Zinc-coated metal parts
- Equipped with a safety catch to prevent the radiator from lifting and move
- Enables wall mounting at a distance of **D = 40 mm** from the wall
- Use for concrete structures and masonry from porous concrete and solid bricks, for a different type of material it is necessary to choose an appropriate type of anchors
- Maximum vertical load of the bracket is **1500 N**
- Maximum horizontal load in the longitudinal and transverse directions is **250 N**

Number of Brackets

For mounting KORATHERM radiators it is always necessary to use the number of brackets corresponding to the number of upper welded clips (see Mounting to the wall). For mounting KORATHERM HORIZONTAL radiators of type 10 and 11, it is possible to use three brackets from radiators of the length L = 2300 mm and longer.

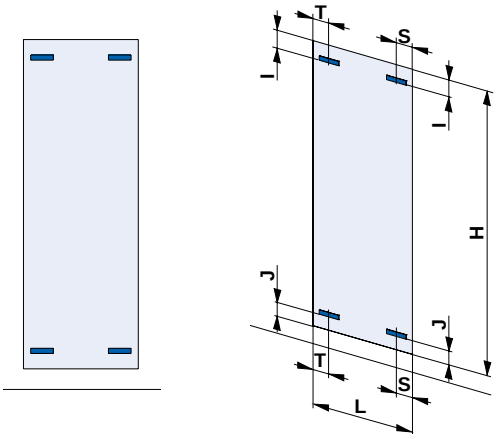
Type	Order number
VERTIKAL Split Bracket	Z - U558

Positioning



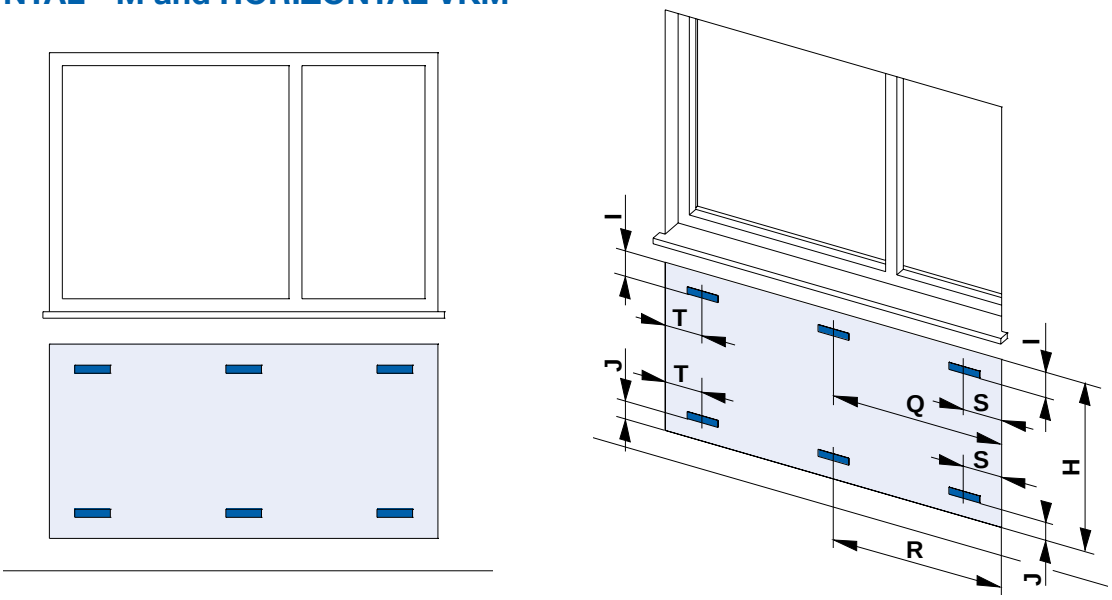
DATA FOR WALL MOUNTING

Location of hangers for KORATHERM VERTIKAL, VERTIKAL - M and REFLEX



KORATHERM VERTIKAL, KORATHERM VERTIKAL - M, KORATHERM REFLEX				
K10V K10VM K10R K11V K11VM K20V K20VM K20R	L [mm]	144	218	366 ÷ 958
	I	90	90	90
	J	65	65	65
	T	72	60	80
	S	-	60	80

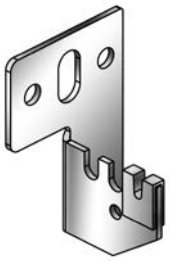
Location of hangers for KORATHERM HORIZONTAL, HORIZONTAL - K, HORIZONTAL - M and HORIZONTAL VKM



KORATHERM HORIZONTAL, KORATHERM HORIZONTAL - K, KORATHERM HORIZONTAL - M, KORATHERM HORIZONTAL VKM							
H [mm]	L [mm]	500 ÷ 1600	1800	2000	2300	2600	3000
144	I	50	50	50	50	50	50
	J	5	5	5	5	5	5
	S, T	160	160	160	160	160	160
	Q	-	900	1000	1150	1300	1500
	R	-	-	-	-	-	-
218	I	50	50	50	50	50	50
	J	25	25	25	25	25	25
	S, T	160	160	160	160	160	160
	Q	-	900	1000	1150	1300	1500
	R	-	-	-	-	-	-
366 ÷ 958	I	125	125	125	125	125	125
	J	25	25	25	25	25	25
	S, T	160	160	160	160	160	160
	Q	-	900	1000	1150	1300	1500
	R	-	900 *	1000 *	1150	1300	1500

* valid for types 20, 21 and 22.

Single wall bracket



- The set includes two brackets, two supports, 8 x 60 mm screws, and ø 10 mm expansion plugs
- Metal parts are galvanized
- For use in concrete construction and cellular concrete or solid brick construction
- For wall mounting at a distance of **D = 40** mm from the wall
- Maximum vertical load for the bracket is **500 N**

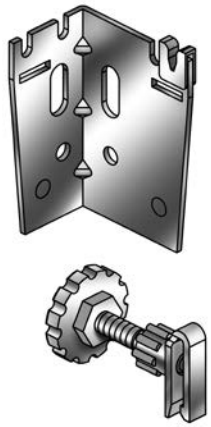
Type	Order number
Single wall bracket	Z-U320

Number of brackets for KORATHERM HORIZONTAL, HORIZONTAL - K, HORIZONTAL - M, HORIZONTAL VKM

KORATHERM HORIZONTAL, HORIZONTAL - K, HORIZONTAL - M, HORIZONTAL VKM																
Type	**H** [mm]	**L** [mm]														
		500	**600**	**700**	**800**	**900**	**1000**	**1100**	**1200**	**1400**	**1600**	**1800**	**2000**	**2300**	**2600**	**3000**
K10H	**144**	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	218	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	366	2	2	2	2	2	2	2	2	2	4	3	3	3	3	3
	514	2	2	2	2	2	2	4	4	4	4	3	3	3	3	3
	588	2	2	2	2	4	4	4	4	4	4	3	3	3	3	3
	662	2	2	2	4	4	4	4	4	4	4	3	3	3	3	3
	884	2	4	4	4	4	4	4	4	4	4	3	3	6	6	6
	958	4	4	4	4	4	4	4	4	4	4	3	3	6	6	6
K11H K11HK K11HM K11HVKM	**144**	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	218	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	366	2	2	2	2	2	2	2	2	4	4	3	3	3	3	3
	514	2	2	2	2	4	4	4	4	4	4	3	3	3	3	3
	588	2	2	2	4	4	4	4	4	4	4	3	3	3	3	6
	662	2	2	4	4	4	4	4	4	4	4	3	3	3	6	6
	884	4	4	4	4	4	4	4	4	4	4	5	5	6	6	6
	958	4	4	4	4	4	4	4	4	4	4	5	5	6	6	
K20H K20HK K20HM K20HVKM	**144**	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	218	2	2	2	2	2	2	2	2	4	4	3	3	3	3	3
	366	2	2	2	4	4	4	4	4	4	4	3	3	3	3	6
	514	2	4	4	4	4	4	4	4	4	4	3	6	6	6	6
	588	4	4	4	4	4	4	4	4	4	4	6	6	6	6	6
	662	4	4	4	4	4	4	4	4	4	4	6	6	6	6	
	884	4	4	4	4	4	4	4	4	4	4	6	6			
	958	4	4	4	4	4	4	4	4	4	4	6				
K21H K21HK K21HM K21HVKM	**144**	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	218	2	2	2	2	2	2	2	4	4	4	3	3	3	3	3
	366	2	2	4	4	4	4	4	4	4	4	3	3	3	6	6
	514	4	4	4	4	4	4	4	4	4	4	6	6	6	6	6
	588	4	4	4	4	4	4	4	4	4	4	6	6	6	6	
	662	4	4	4	4	4	4	4	4	4	4	6	6	6		
	884	4	4	4	4	4	4	4	4	4	4	6				
	958	4	4	4	4	4	4	4	4	4	4					
K22H K22HK K22HM K22HVKM	**144**	2	2	2	2	2	2	2	2	2	4	3	3	3	3	3
	218	2	2	2	2	2	4	4	4	4	4	3	3	3	3	3
	366	2	4	4	4	4	4	4	4	4	4	3	3	6	6	6
	514	4	4	4	4	4	4	4	4	4	4	6	6	6	6	
	588	4	4	4	4	4	4	4	4	4	4	6	6	6		
	662	4	4	4	4	4	4	4	4	4	4	6	6			
	884	4	4	4	4	4	4	4	4	4						
	958	4	4	4	4	4	4	4	4	4						

DATA FOR WALL MOUNTING

Single wall bracket - angular



- The set includes two brackets, two supports, 8 x 60 mm screws, and ø 10 mm expansion plugs
- Metal parts are galvanized
- For use in concrete construction and cellular concrete or solid brick construction
- For wall mounting at a distance of **D = 54 mm or 36 mm** from the wall
- Maximum vertical load for the bracket is **700 N**

Type	Order number
Single wall bracket - angular	Z-U300

Number of brackets for KORATHERM HORIZONTAL, HORIZONTAL - K, HORIZONTAL - M, HORIZONTAL VKM

KORATHERM HORIZONTAL, HORIZONTAL - K, HORIZONTAL - M, HORIZONTAL VKM																
Type	**H** [mm]	**L** [mm]														
		500	**600**	**700**	**800**	**900**	**1000**	**1100**	**1200**	**1400**	**1600**	**1800**	**2000**	**2300**	**2600**	**3000**
K10H	**144**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	218	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	366	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	514	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	588	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	662	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	884	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	958	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
K11H K11HK K11HM K11HVKM	**144**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	218	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	366	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	514	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	588	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	662	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	884	2	2	2	2	2	2	2	2	2	4	3	3	3	3	3
	958	2	2	2	2	2	2	2	2	2	4	3	3	3	3	
K20H K20HK K20HM K20HVKM	**144**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	218	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	366	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	514	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	588	2	2	2	2	2	2	2	2	2	4	3	3	3	3	3
	662	2	2	2	2	2	2	2	2	4	4	3	3	3	3	
	884	2	2	2	2	2	4	4	4	4	4	3	3			
	958	2	2	2	2	4	4	4	4	4	4	3				
K21H K21HK K21HM K21HVKM	**144**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	218	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	366	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	514	2	2	2	2	2	2	2	2	2	4	3	3	3	3	3
	588	2	2	2	2	2	2	2	2	4	4	3	3	3	3	
	662	2	2	2	2	2	2	2	4	4	4	3	3	3		
	884	2	2	2	2	4	4	4	4	4	4	3				
	958	2	2	2	2	4	4	4	4	4	4					
K22H K22HK K22HM K22HVKM	**144**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	218	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	366	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	514	2	2	2	2	2	2	2	2	4	4	3	3	3	3	
	588	2	2	2	2	2	2	2	4	4	4	3	3	3		
	662	2	2	2	2	2	2	4	4	4	4	3	3			
	884	2	2	2	4	4	4	4	4	4						
	958	2	2	4	4	4	4	4	4	4						

DATA FOR MOUNTING ON THE FLOOR
FOR TYPES 20, 21, 22

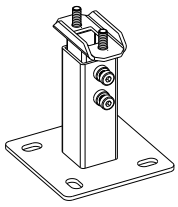
Mounting on the Floor

KORATHERM design radiators in HORIZONTAL version, specifically types 20, 21 and 22 up to a maximum height of H_{max} **= 588 mm**, can be mounted on the floor using special stand brackets. These radiators can be also ordered even without welded wall mounting clips (see position 11 in the ordering code on page 40).

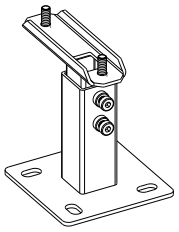
For covering the base plate of the stand bracket, it is possible to order a split plastic cover.

KORATHERM stand bracket

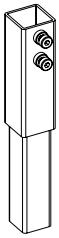
- The set contains one bracket, complete material for mounting and mounting instructions
- Use up to a height of H_{max} **= 588 mm**
- Individual parts painted with white as standard
- The maximum vertical load on the bracket is **1000 N**



for type 20, 21



for type 22



Extension piece for stand brackets RADIK and KORATHERM

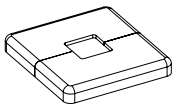
Number of Brackets

For mounting the **KORATHERM HORIZONTAL** models up to a length of L = 2000 mm, it is necessary to use two stand brackets and three stand brackets are necessary for lengths of L = 2300, 2600, and 3000 mm. The **KORATHERM HORIZONTAL – M** and **KORATHERM HORIZONTAL VKM** models are mounted to the floor using two stand brackets (manufactured up to a length of 2000 mm).

Type	Order number
KORATHERM stand bracket for types 20 and 21	Z-U580-XY
KORATHERM stand bracket for type 22	Z-U581-XY
Cover for KORATHERM stand brackets - white	Z-U582
Extension piece for stand brackets RADIK and KORATHERM	Z-U402

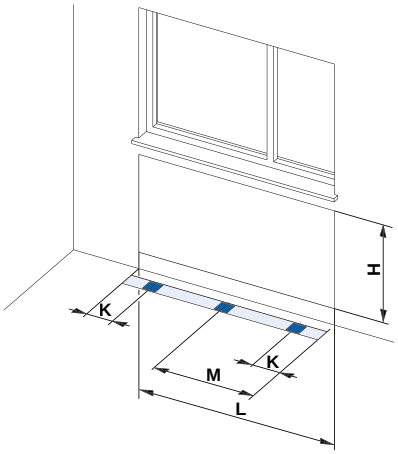
We offer stand brackets in the colours according to KORADO colour chart.

Order codes of stand brackets are Z-U580-XY and Z-U581-XY. XY positions indicate the colour code (see colour chart on page 43).
The basic colour is white RAL 9016, other colour shades are subject to an additional charge (see the colour chart on page 43).



Cover for KORATHERM stand brackets

Location of stand brackets



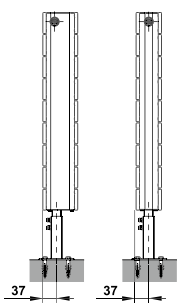
KORATHERM table of sizes

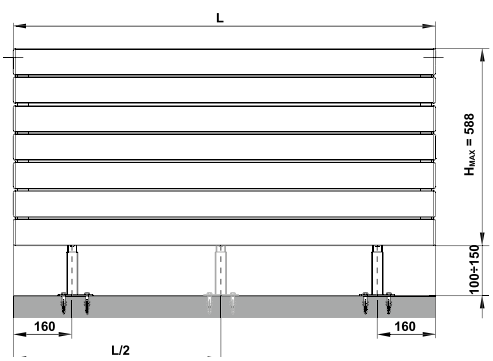
HORIZONTAL, HORIZONTAL - K, HORIZONTAL - M, HORIZONTAL VKM					
Type	**L** [mm]	**500 ÷ 2000**	**2300 ***	**2600 ***	**3000 ***
20 21 22	**K**	160	160	160	160
	M	-	1150	1300	1500
	K	160	160	160	160
	M	-	1150	1300	1500
	K	160	160	160	160
	M	-	1150	1300	1500

* KORATHERM HORIZONTAL - K, KORATHERM HORIZONTAL VKM and KORATHERM HORIZONTAL - M is available in lengths up to L = 2000 mm

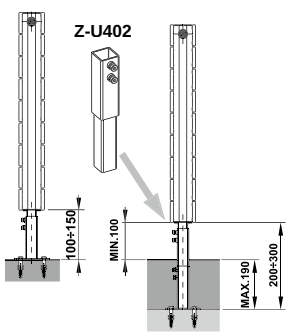
Positioning

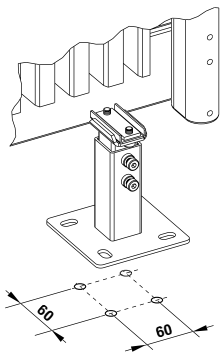
Type 22 Type 20, 21





(Valid length L = 2300 ÷ 3000 mm)





DATA FOR MOUNTING ON THE FLOOR
FOR TYPES 23, 44, 46

Mounting on the Floor

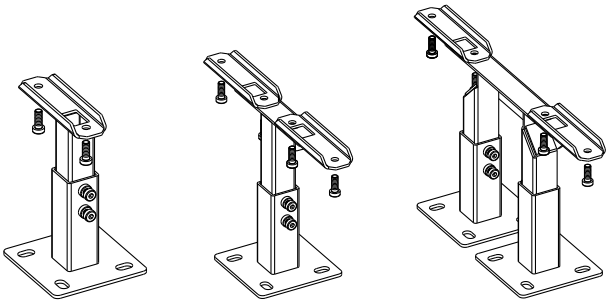
KORATHERM design radiators in HORIZONTAL version, specifically types 23, 44 and 46 with heights of 144 or 218 mm are mounted on the floor using stand brackets.

For covering the base plate of the stand bracket, it is possible to order a split plastic cover.

KORATHERM stand bracket

The set contains one bracket, complete material for mounting and mounting instructions.

- Individual parts painted with white RAL 9016 as standard
- The maximum vertical load on the bracket is **1000 N**



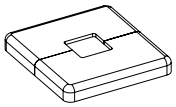
pro typ 23 pro typ 44 pro typ 46

Number of Brackets

For mounting the **KORATHERM HORIZONTAL** models up to a length of L = 2000 mm, it is necessary to use two stand brackets, and three stand brackets are necessary for lengths of L = 2300, 2600 and 3000 mm. The **KORATHERM HORIZONTAL - M** model is only manufactured up to a length of 2000 mm.

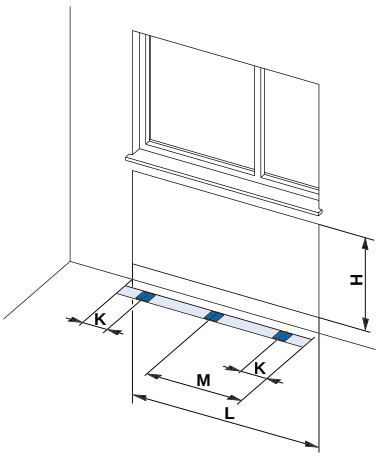
Type	Order number
KORATHERM stand bracket for types 23	Z-U581-XY
KORATHERM stand bracket for type 44	Z-U583-XY
KORATHERM stand bracket for type 46	Z-U584-XY
Cover for KORATHERM stand brackets - white	Z-U582

XY positions indicate the colour code (see colour chart on page 43).
The basic colour is white RAL 9016, other colour shades are subject to an additional charge (see the colour chart on page 43).



Cover for KORATHERM stand brackets

Location of stand brackets



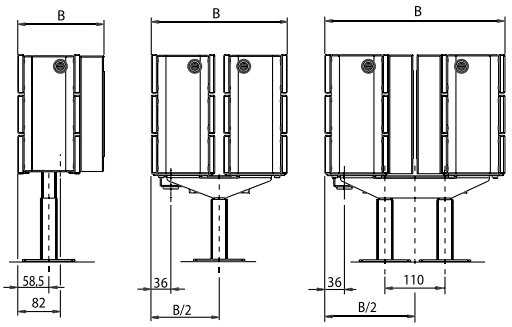
KORATHERM table of sizes

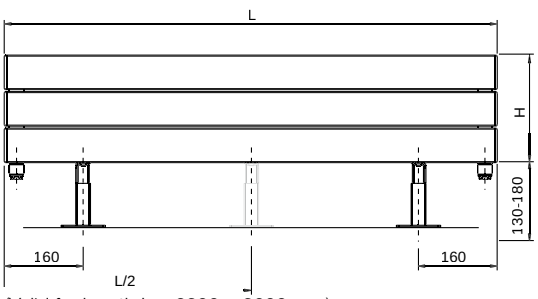
HORIZONTAL, HORIZONTAL - M, HORIZONTAL VKM					
Type	**L** [mm]	**500 ÷ 2000**	**2300***	**2600***	**3000***
23 44 46	**K**	160	160	160	160
	M	-	1150	1300	1500
	K	160	160	160	160
	M	-	1150	1300	1500
	K	160	160	160	160
	M	-	1150	1300	1500

* KORATHERM HORIZONTAL - M
is available in lengths up to L = 2000 mm

Positioning

Type 23 Type 44 Type 46

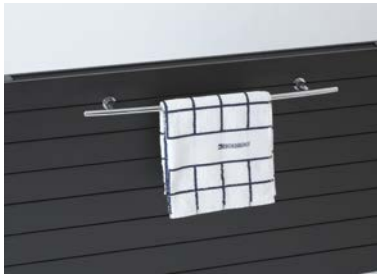


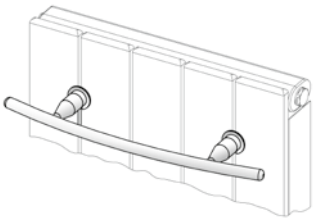


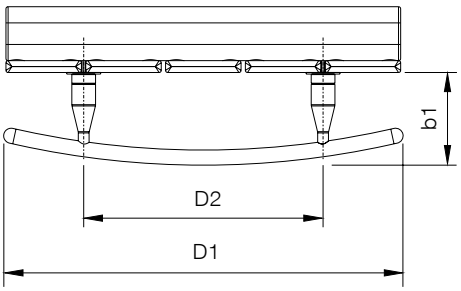
(Valid for length L = 2300 ÷ 3000 mm)

Towel hanger for KORATHERM

- designed for use with all models of KORATHERM towel rail radiators except for the VERTIKAL and HORIZONTAL
- simple fitting and removal
- manufactured from stainless steel
- the choice of length of the hanger **D1** depends on the length of the radiator **L**
- maximum vertical load on the hanger is **50 N** (up to 5 kg)
- the set contains 1 pc of the Towel hanger for KORATHERM



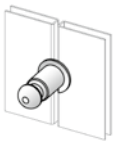


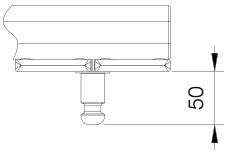


Type	D1 [mm]	D2 [mm]	b1 [mm]	min radiator lenght L [mm]	Order number
Towel hanger for KORATHERM 370	370	222	86	366	Z-D035
Towel hanger for KORATHERM 518	518	370	102	514	Z-D036

Towel peg for KORATHERM

- designed for use with all models of KORATHERM towel rail radiators except for the VERTIKAL and HORIZONTAL model
- simple fitting and removal
- manufactured from stainless steel
- maximum vertical load on peg is **50 N** (up to 5 kg)
- the set contains 1 pc of the Towel peg for KORATHERM





Type	Order number
Towel peg for KORATHERM	Z-D038

INFORMATION FOR ORDERING

Table for Creation of a Code

Position	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.		12.	13.	14.			15.	16.
Items KORATHERM	**K**	**T**	**T**	**P**	**H**	**H**	**H**	**L**	**L**	**L**	**-**	**N**	**0**	**0**	**-**	**M**	**V**	**X**	**X**

Order code – meaning of the items

Position	ITEMS - Description		Code
1.	KORATHERM flat panel radiators		**K**
2. ÷ 3.	Type **T**		**10, 11, 20, 21, 22, 23, 44, 46**
4.	Version **P**	VERTIKAL	**V**
		HORIZONTAL	**H**
		REFLEX	**R**
5. ÷ 7.	Height **H** v cm*		**HHH**
8. ÷ 10.	Length **L** v cm*		**LLL**
11.	Hangers	YES	**-**
		NO	**N**
12. ÷ 13.	Additinal information		**00**
14.	Type of connection	universal lateral	**K**
		central bottom connection	**M**
		HORIZONTAL VKM	**V**
		bottom connection	**-**
		side	**-**
15. ÷ 16.	Colour code		**XX**

* to be rounded down, e.g. 366 mm = 36 cm

How to order

Model	Model number	Order code
KORATHERM VERTIKAL	K10V	K 10 V HHH LLL - 00 - XY
	K11V	K 11 V HHH LLL - 00 - XY
	K20V	K 20 V HHH LLL - 00 - XY
KORATHERM VERTIKAL - M	K10VM	K 10 V HHH LLL - 00 M XY
	K11VM	K 11 V HHH LLL - 00 M XY
	K20VM	K 20 V HHH LLL - 00 M XY
KORATHERM HORIZONTAL	K10H	K 10 H HHH LLL - 00 - XY
	K11H	K 11 H HHH LLL - 00 - XY
	K20H	K 20 H HHH LLL - 00 - XY
	K21H	K 21 H HHH LLL - 00 - XY
	K22H	K 22 H HHH LLL - 00 - XY
	K23H	K 23 H HHH LLL - 00 - XY
	K44H	K 44 H HHH LLL - 00 - XY
	K46H	K 46 H HHH LLL - 00 - XY
KORATHERM HORIZONTAL - K	K11HK	K 11 H HHH LLL - 00 K XY
	K20HK	K 20 H HHH LLL - 00 K XY
	K21HK	K 21 H HHH LLL - 00 K XY
	K22HK	K 22 H HHH LLL - 00 K XY
KORATHERM HORIZONTAL - M	K11HM	K 11 H HHH LLL - 00 M XY
	K20HM	K 20 H HHH LLL - 00 M XY
	K21HM	K 21 H HHH LLL - 00 M XY
	K22HM	K 22 H HHH LLL - 00 M XY
	K23HM	K 23 H HHH LLL - 00 M XY
	K44HM	K 44 H HHH LLL - 00 M XY
	K46HM	K 46 H HHH LLL - 00 M XY
KORATHERM HORIZONTAL VKM	K11HVKM	K 11 H HHH LLL - 00 V XY
	K20HVKM	K 20 H HHH LLL - 00 V XY
	K21HVKM	K 21 H HHH LLL - 00 V XY
	K22HVKM	K 22 H HHH LLL - 00 V XY
KORATHERM REFLEX	K10R	K 10 R HHH LLL - 00 - XY
	K20R	K 20 R HHH LLL - 00 - XY

Practical examples of stock codes

KORATHERM VERTIKAL with side connection for mounting on the wall, type 11, height H = 2000 mm, length L = 366 mm, colour white RAL 9016

K TT P HHH LLL - 00 - XY
K 11 V 200 036 - 00 - 10

KORATHERM HORIZONTAL - M with bottom middle connection for mounting NMSGDkNNQ, SXOD, GDHFGS'LL, KDMFSG+LL, BNKNTQ2HKADQ

K TT P HHH LLL N 00 M XY
K 22 H 021 200 N 00 M 35

KORATHERM HORIZONTAL with bottom connection, type 11, height H = 662 mm, length L = 1200 mm, colour Alloy Black

K TT P HHH LLL - 00 - XY
K 11 H 066 120 - 00 - 40

KORATHERM REFLEX with side connection for mounting on the wall, type 10, height H = 1800 mm, length L = 958, colour Anthrazit Metallic

K TT P HHH LLL - 00 - XY
K 10 R 180 095 - 00 - 32

SVÚOM PRAHA – INFORMATION

(I.E. STATE RESEARCH INSTITUTE FOR PROTECTION OF MATERIALS)

The below given information defines conditions for appropriate using steel radiators which are protected with final surface finish in accordance with DIN 55 900 standard. It also specifies critical locations, spaces and environment limiting their applications. KORADO, a.s. (joint-stock co.) recommends the below given advice to be strictly respected at all practical applications because this will be taken into consideration in case of judgement and evaluation of any future claims and/or complaints.

POSSIBILITIES AND LIMITATIONS FOR USING STEEL RADIATORS WITH SURFACE FINISH ACCORDING TO DIN 55 900 STANDARD:

(Explicit comment from the Prague State Research Institute for Protection of Materials)

1. REQUIREMENTS FOR SURFACE FINISH OF RADIATORS

1.1 General

The requirements concerning the surface finish of radiators are defined in German standard DIN 55 900 which bears the following title: "Surface finish of radiators. Terminology, requirements, tests. Surface finish made industrially." The said standard relates to materials which are used for surface finish of radiators and it is binding for industrially made surface finish of radiators for hot water heating and low pressure steam heating (temperature of the heat-carrying medium up to 120 °C). The object of the said standard in not surface finish of radiators

operating with temperatures exceeding 120 °C or which are to be used in spaces with aggressive and/or humid environment air. Kitchens, bathrooms etc. and places outside the reach of water shower spraying and toilets are not considered to be spaces with aggressive and/or humid environment air.

The DIN 55 900 standard is divided into 2 parts: DIN 55 900-1 defines the base paint layer for radiators, DIN 55 900-2 defines the final surface finish of radiators. The said standard specifies reguirements on paint coating materials applicable for surface finish, i.e. both their physical-mechanical properties (adhesion, impact resistance)and corrosion resistance (resistance against condensating water).

In general terms, the said standard also requires that radiators with final paint coating must be protected appropriately for and during: transportation, storage, and mounting, and it must be possible to clean the radiators surface with common detergents (non abbrasive).
The said standard is the basis for definition and assessment of the surface finish quality and for compliance with all principles therein stipulated, all of which is binding both for manufacturers and users of radiators. B reach of the scope of the standard DIN 55 900 by the user may be the cause of extinction of the producer´s quarantees.

2. QUALITATIVE DESCRIPTION OF TYPICAL ENVIRONMENTS

The qualitative description of typical environments with relevant grades of corrosivity is given in the table under the following title:
Qualitative description of typical environments for judgement of corrosivity grades:

Corrosivity grade	Corrosivity	Examples of typical interior environments
C-1	Very low	Heated spaces with relative low humidity (30 – 65 %) and with negligible uncleanliness, e.g. office premises, schools, museums, flats, hotels, shops, etc.
C-2	Low	Unsufficiently heated spaces with changeable temperature and with relative humidity exceeding 70 %. Rare occurrence of condensation and minor uncleanliness, e.g. warehouses, corridors, gym halls, etc.
C-3	Average	Spaces with average occurrence of condensation and with average uncleanliness caused by technological or other processes, e.g. food production premises, laundry plants, breweries, dairy houses, meat packing factories, etc.
C-4	High	Spaces with high occurrence of condensation and with average uncleanliness caused by technological or other processes, e.g. industrial manufacturing premises, swimming pools, bath houses, car-washing facilities, public WCs, stables, etc..
C-5	Very High	Spaces with nearly constant occurrence of condensation and/or with high uncleanliness caused by technological processes, e.g. mining premises, underground technological spaces/ rooms/halls, unaired shelters in tropical humid areas.

The radiators with surface finish complying with the DIN 55 900 standard are applicable in spaces/premises with C 1 interior air environment without limitation for a long period of service.

However, pursuant to the DIN 55 900-2 standard, the radiators must not be placed in spaces with aggressive or humid environment air (C2 – C5). Any placement of such radiators in the lower defined spaces must be considered as critical.

3. POSSIBILITIES AND LIMITATIONS FOR USING STEEL RADIATORS WITH SURFACE FINISH COMPLYING WITH DIN 55 900 STANDARD:

3.1 Spaces with possible water spray or water solutions spray

In spaces/premises with the C1 interior environment air, e.g. in flats, offices, schools and other public buildings, there are also some rooms (kitchens, bathrooms, toilets) wherein some places with corrosion activity of C2 – C5 can be found.

These are places within a direct reach of water spray or water solutions spray (e.g. places under kitchen sinks, under wash-basins, under showers, and some other places which are regularly sprayed with water). Such places are considered as spaces with humid or aggressive environment air and they are not suitable for placing radiators there even though the whole rooms in question (i.e. kitchens, bathrooms, toilets) are not considered to have aggressive or humid environment air.

That is why the guaranty claims resulting from the title of corrosion or from a change of the surface appearance cannot be applied on those radiators which are placed within reach of water spray or within reach of aggressive solutions (C2 – C5 spaces). In case it is necessary to place radiators within such a reach or in the middle of such an area, special protective measures must be applied (e.g. using zinc-coated or corrosion more resistant sheets, appropriate encasing etc.) which prevent corrosion damage of the surface finish of the radiators in question.

Radiators with surface finish complying with the DIN 55 900 standard can thus be installed in kitchens, bathrooms and toilets, provided they are located in the suitable place of the room.

3.2 Spaces which are unsufficiently air-ventilated

These are rooms (spaces with C2 interior environment air and higher) with windows which are never opened or rooms without windows where no sufficient air exchange can be achieved and maintained. In such spaces, humidity from air can often condensate on turned-off and therefore cold radiators. This condensated humidity can damage the protective coating due to corrosion or blistering.

Regular air-ventilation of the heated rooms/premises is the necessary protection of the surface finish of radiators against humidity and condensated water. It is not recommended, as a kind of protection against condensated humidity, to turn off radiators which are placed in unsufficiently air-ventilated rooms.

Using radiators complying with the surface finish according to DIN 55 900 inside bathrooms, toilets and launderettes (without windows) is possible only if air-ventilation is maintained in accordance with DIN 18 017 standard, Part 1 and Part 3, wherein hour exchanges of air volumes are defined. Analogically, requirements re. temperature-humidity microclimate are given in ČSN EN ISO 7730 standard.

If no regular air-ventilation is possible, or if no permanent air exchange can be achieved, radiators must be in continuous operation so that cooling down of such surfaces is prevented where air humidity would condensate.

Users of such unaired and humid rooms (e.g bathrooms, launderettes) must respect this fact. C losed rooms with installed radiators must be heated or air-ventilated regularly. Requirements defining air-ventilation of flats or houses are given in the following table:

Room	Air exchange rate
Kitchen	50 l/s – during operation 12 l/s – with permanent air-ventilation or with opened windows
Bathroom, toilet	25 l/s – when being used 10 l/s – with permanent air-ventilation or with opened windows
Garage a) separate b) shared	50 l/s – separate 7,5 l/s car – shared

3.3 Spaces with permanent increased humidity or aggressivity of environment air

This relates to critical rooms and premises (C2 – C5), i.e. swimming pools, saunas, public toilets, car-washing facilities, laundry plants, battery recharging workshops, various premises in chemical and food processing industries, and rooms and spaces where wet cleaning is carried out by means of low or high pressure equipment etc. The radiators complying with DIN 55 900 are not suitable for application in such premises.
If the said radiators are still to be installed into such difficult conditions, it is necessary to consult the manufacturer for the best possible placement of the radiators and to set limitations for usage of these radiators with standard surface finish. Inside the above mentioned critical premises there are usually also places with the corrossion impact of grade C1, such as offices, changing rooms, workshops, dining halls etc. wherein the radiators complying with DIN 55 900 can be applied without limitations.

4. STORING OF RADIATORS AND MOUNTING OF RADIATORS

The DIN 55 900 standard requires that radiators provided with the final surface coating must be appropriately protected for and during transportation and for storage and mounting and that it must be possible to clean the radiators surface with common detergents.
The following advice is to be respected.

4.1 Transportation

During transportation but also during storage and final mounting of radiators, it is necessary to prevent any damage of the radiator coating and/or of all covering elements. No damage caused by rain or by any aggressive impurities may occur.

4.2 Storage

Radiators provided with final surface finish must be stored at the user's in dry and well air-ventilated spaces so that no corrosion damage of the radiators surface finish occurs.

4.3 Protection of the surface finish during mounting

Mounting of the radiators is to be carried out in such a manner that the protective wrapping is removed only after all building construction jobs (e.g. floor tiling, concrete works, wall painting/ decorating and cleaning) has been finished in order to prevent any damage of radiators, especially any damage of their surface finish. The radiators can be mounted and put into operation without removing the protective wrapping.

4.4 Cleaning

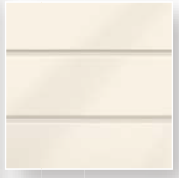
Radiators with final surface finish can be cleaned with such suitable water-borne detergents which are commonly used in households without any adverse impact on the painted surface. Such detergents must neither be abrasive (they would abrade the surface) nor strongly alkaline or acidic (i.e. chemically aggressive).

COLOUR CARD

SILK GLOSS

code 10
White RAL 9016*

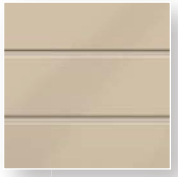
code 14
Jasmine



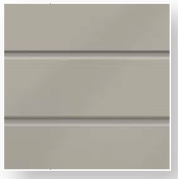
code 35
Silber RAL 9006

HIGH GLOSS

code 16
Bahama

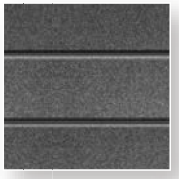


code 22
Manhattan

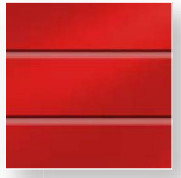


code 26
Pergamon

code 32
Anthrazit Metallic

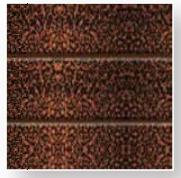


code 37
Red RAL 3001



code 39
Black RAL 9005

code 45
Pearl Brown



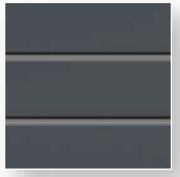
MATTE

code 47
RAL 9007

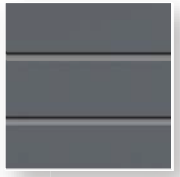
code 48
RAL 9006

code 49
RAL 7024

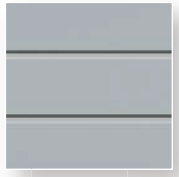
code 51
RAL 7016



code 54
RAL 7015



code 57
RAL 7040



DEEP MATTE

code 40
Alloy Black

code 42
Gold

Notice:
The colour of the radiator may vary in comparison with the colour shown in the KORALUX colour card.
The standard paint finish is white RAL 9016*, other colours from KORADO colour range with an extra charge 20 %.
Radiators can be ordered also in other colours from RAL colour range under the ordering code 99 with an extra charge 30 %.

NOTES

NOTES

NOTES


5
YEARS
GUARANTEE
HORRIDO


EURONORM
EN 442


55
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