

# KORATHERM **AQUAPANEL B / B-ER**KORALUX **LINEAR MAX B / B-ER**KORALUX **LINEAR COMFORT B / B-ER**

## TOWEL RAIL RADIATORS WITH ELECTRIC BOOSTER



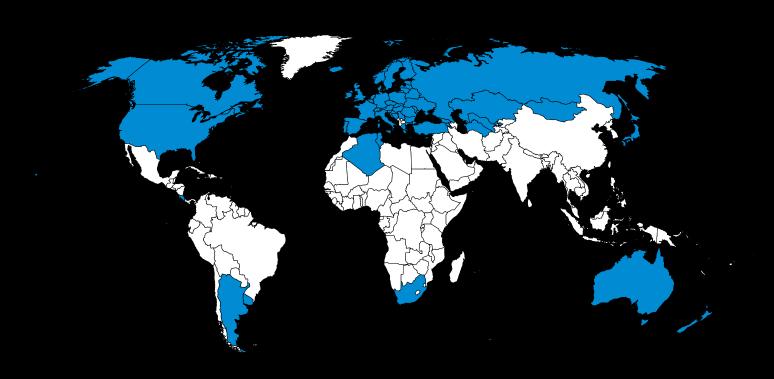


TOWEL RAIL RADIATORS WITH ELECTRIC BOOSTER 03/2024 replaces all previous issues.

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<sup>2</sup> 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 and ISO 14001 quality certificate.



www.korado.com

## TABLE OF CONTENTS



TOWEL RAIL RADIATORS WITH ELECTRIC BOOSTER	6 - 7
KORATHERM AQUAPANEL B	8
ELECTRIC INPUT KORATHERM AQUAPANEL B	9
KORATHERM AQUAPANEL B-ER	10
ELECTRIC INPUT AQUAPANEL B-ER	11
HEAT OUTPUTS KORATHERM AQUAPANEL B	12
DATA FOR WALL MOUNTING KORATHERM AQUAPANEL B/B-ER	13
KORALUX LINEAR MAX B	14
ELECTRIC INPUT KORALUX LINEAR MAX B	15
KORALUX LINEAR MAX B-ER	16
ELECTRIC INPUT LINEAR MAX B-ER	
HEAT OUTPUTS LINEAR MAX B	18 - 19
KORALUX LINEAR COMFORT B	20
ELECTRIC INPUT KORALUX LINEAR COMFORT B	21
KORALUX LINEAR COMFORT B-ER	
ELECTRIC INPUT LINEAR COMFORT B-ER	23
HEAT OUTPUTS LINEAR COMFORT B	24 - 25
ACCESSORIES	26
DATA FOR ORDERING	
SVÚOM PRAGUE - INFORMATION	28 - 29
GENERAL INFORMATION	30
QUALITY AND SAFETY SERVICE	31

## ADVANTAGES OF KINORADO RADIATORS

- made to last
- excellent finish
- low water content
- high resistance to excess pressure
- low weight
- multifunction packaging
- ISO 9001 guarantee of quality of products and services

## TOWEL RAIL RADIATORS WITH ELECTRIC BOOSTER

#### **Description and design solution**

We present to you a new product in our offer, which represents a revolutionary solution for heating your home: **KORATHERM AQUAPANEL B / B-ER, KORALUX LINEAR MAX B / B-ER and KORALUX LINEAR COMFORT B / B-ER.** These models are synonymous with innovation, elegance and maximum efficiency. Their unique design and advanced technologies allow you to achieve perfect comfort in your home, with minimal energy costs.

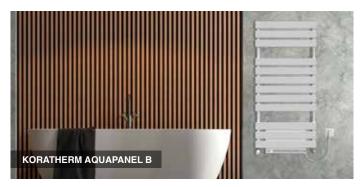
Each model is equipped with top technology for intelligent temperature regulation, which ensures accurate and stable temperature conditions in the bathroom throughout the year. Thanks to the Super Boost function, you can achieve a rapid increase in temperature in no time, which is ideal for those times when you need to heat up a room quickly. Plus, with automatic and self-learning programming, these radiators adapt to your lifestyle, leading to further energy savings.

Individual models are designed to fit perfectly into any interior. The discreet installation of the electric booster ensures that it remains aesthetically invisible, contributing to the overall clean look of your bathroom.

Here are 4 key benefits that make these models a great choice for your home:

- 1. Intelligent temperature control Maintains a stable and accurate temperature in the bathroom throughout the year.
- 2. Super Boost function Enables an immediate and rapid increase of the temperature in the room.
- 3. Automatic and adaptive programming Learns to recognize your habits and adapts to maximize energy savings.
- 4. Sophisticated design The electric booster is designed to become an inconspicuous part of the space.

Don't miss the opportunity to improve the heating quality of your home with our innovative models **KORATHERM** a **KORALUX**. Choose the model that best suits your needs and enjoy the heat and comfort it brings.













## TOWEL RAIL RADIATORS WITH ELECTRIC BOOSTER



#### **Description and design solution**

These are design radiators KORATHERM and towel rail radiator KORALUX. These radiators are fitted with an electric electric booster. The combined variant is connected to a hot water heating system and the direct heating electric variant is supplemented with an electric heating element. The direct radiator is filled with an antifreeze mixture, which allows their use in buildings with a predicted temperature drop of up to -10 °C.

When looking at an electric direct radiator on the wall, the electric heating element is always mounted in its right vertical profile by default. Electric direct radiators can only be installed in a vertical position with the cable feed at the bottom and do not require an expansion or safety pressure device during operation.



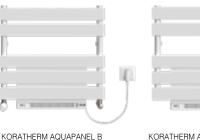
(combined radiators with electric booster)

Design radiators KORATHERM AQUAPANEL B and towel rail radiators KORALUX LINEAR MAX B and KORALUX LINEAR COMFORT B are connected to hot water heating system and supplemented with an electric electric booster. This creates a radiator for combined heating (hot water - electricity) and can then be used at any time without depending on the operation of the heating system. The electric radiator is connected with a connection cable with a plug for connection to the



(direct electric radiators with electric booster)

The direct electric radiators in the B-ER design are equipped with an electric heating element and a electric booster with an electronic room temperature regulator. The direct radiators are supplied in white RAL 9016, the part includes an electric heating element and a electric booster with a white connecting cable with a plug for connecting to a socket.





KORATHERM AQUAPANEL B-ER





KORALUX LINEAR MAX B-ER





KORALUX LINEAR COMFORT B

KORALUX LINEAR COMFORT B-ER

#### Electric boosters - technical data

Specifications	KORATHERM AQUAPANEL B KORALUX LINEAR MAX B KORALUX COMFORT B	KORATHERM AQUAPANEL BER KORALUX LINEAR MAX BER KORALUX COMFORT BER	
Switch	✓	✓	
Operation indication	✓	✓	
Fault status indication	✓	✓	
Temperature controller	✓	✓	
Weekly program	✓	✓	
Temperature limiter	✓	✓	
Operating mode selection	✓	✓	
Rated voltage	230 V / 50 Hz	230 V / 50 Hz	
Power input range	950 W	950 W a 500 ÷ 1 000 W	
Protection	IP 24	IP 24	
Appliance class	2	2	
Connection cable length	1,2 m	1,2 m	
Working position	Vertical with power supply at the bottom	Vertical with power supply at the bottom	

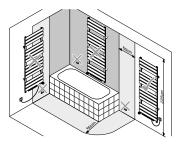
#### Optional accessories

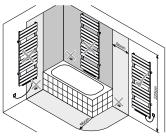
To increase user comfort, the electric booster can be supplemented with a wireless room thermostat. After installation and pairing, the thermostat serves as a fullfledged control unit.

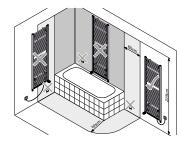
#### Features:

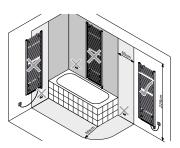
- · coordinated by design
- · with electric booster
- battery power supply 2x 1.5 V
- · accurate temperature measurement
- large controls
- · backlit display











K10AB K10ABER KLMB, KLTB KLMBER, KLTBER

#### Warning - electrical installation:

Installation and replacement may only be carried out by a professional with appropriate electrical technical qualifications. Before connecting to the electrical network for the first time, an authorized person must check whether the electrical installation meets the prescribed safety regulations. In bathrooms and showers, the provisions of the standard ČSN 33 2000-7-701 (or IEC 60364-7-701) must be observed.

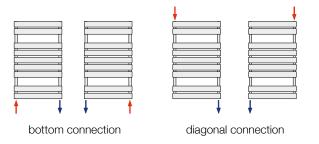
### KORATHERM AQUAPANEL B



#### **Technical Data**

1240, 1510, 1780 mm
500, 600
61 mm
L-50 mm
4 x G 1/2" inside
4 bar
110 °C
3,2 × 10 <sup>-5</sup> m <sup>2</sup>
79,0

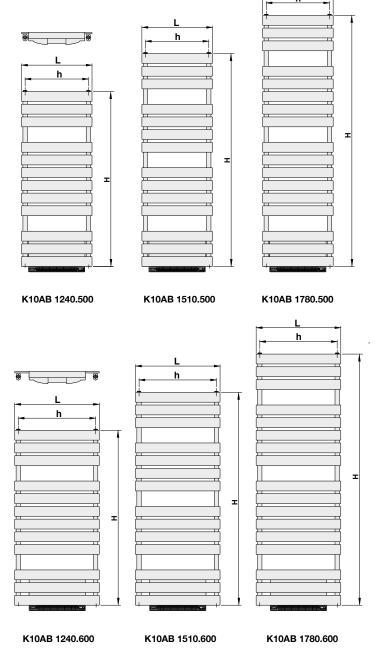
#### Type of connection



#### **Description**

**KORATHERM AQUAPANEL B** is a model of a design series of radiators with horizontally oriented profiles. Its design enables connection to a heating system with forced circulation of the heat carrier. Closed steel elements with a rectangular cross-section of  $70 \times 11$  mm are used as heating profiles, distribution and collection profiles have an oval cross-section of  $50 \times 30$  mm. The delivery also includes a special bracket that guarantees secure fixing of the radiator to the wall. An independent electric electric booster is mounted on the radiator. It can serve as a separate heat source or as an additional heat source during normal operation of the radiator.

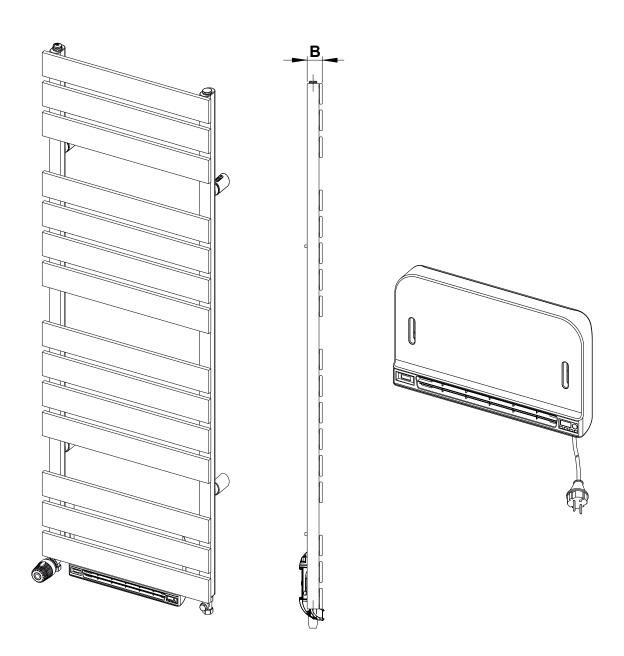
#### **Overview of types**



Guidelines for ordering are described on page 27.

## KORATHERM AQUAPANEL B





### ELECTRICAL INPUT P [W]

Model number	Electrical input of electric booster P [W]	M <sub>c</sub> [kg]
K10AB 1240.500	950	17,6
K10AB 1240.600	950	19,9
K10AB 1510.500	950	20,3
K10AB 1510.600	950	22,9
K10AB 1780.500	950	23,9
K10AB 1780.600	950	27,1

 $\rm M_{c}$  = total weight of the radiator including the electric booster

## KORATHERM AQUAPANEL B-ER



#### **Technical Data**

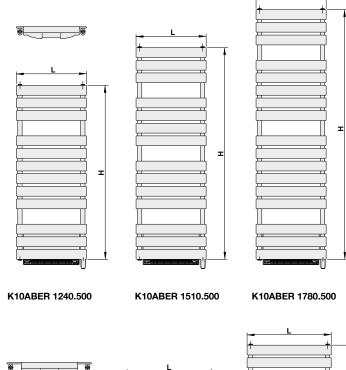
Height H	1240, 1510, 1780 mm
Lenght L	500, 600 mm
Depth B	61 mm

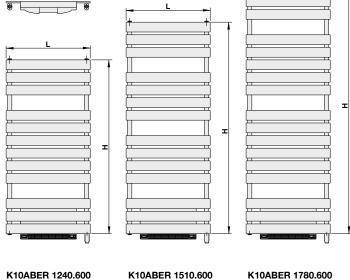
#### **Description**

**KORATHERM AQUAPANEL B-ER** represents a model from the design series of electric direct heating radiators, which is characterized by horizontally oriented profiles.

It is a direct heating electric design radiator equipped with a electric booster and an electric heating element. To achieve optimal thermal comfort, the control unit can independently control both of these heat sources.

#### **Overview of types**

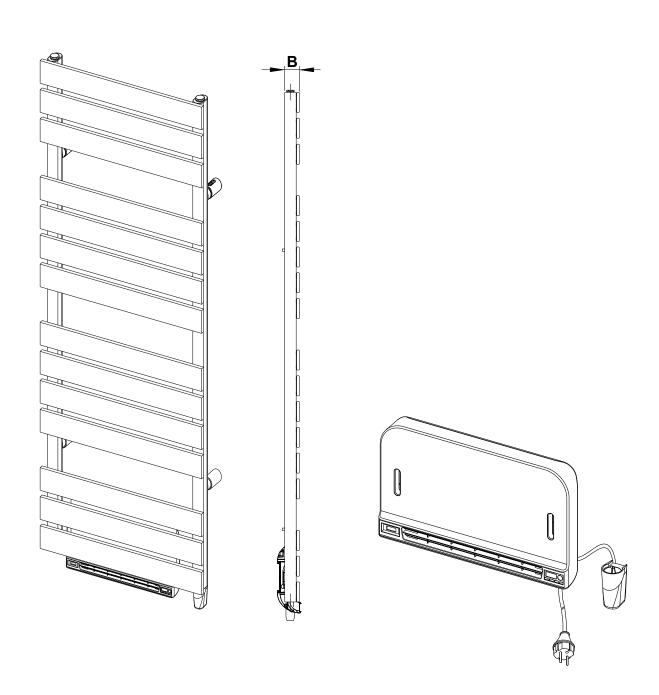




Guidelines for ordering are described on page 27.







#### **ELECTRICAL INPUT P [W]**

Model number	Electrical input of electric booster P [W]	Electrical input el. heating element P [W]	M <sub>c</sub> [kg]
K10ABER 1240.500	950	500	23,4
K10ABER 1240.600	950	600	26,3
K10ABER 1510.500	950	600	27,2
K10ABER 1510.600	950	800	30,6
K10ABER 1780.500	950	700	32,8
K10ABER 1780.600	950	900	36,9

 $\rm M_{c}$  = total weight of the radiator including the electric radiator, electric booster and filling

## KORATHERM AQUAPANEL B

## HEAT OUTPUT Q [W] FOR WATER AS A HEAT-CARRYING AGENT CERTIFIED TO EN 442 BASIC TECHNICAL PARAMETERS

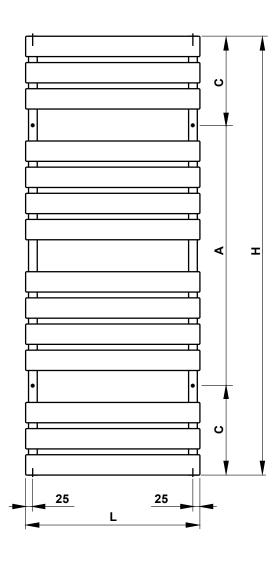
	Typ K10AB													
t, = 20 °C						Basic technical parameters								
L [mm]	H [mm]		Q [W] pro	o t <sub>1</sub> / t <sub>2</sub> [°C]			Q [W] pro	t <sub>1</sub> / t <sub>2</sub> [°C]		W []		M,	V,	Hot air input
[]	[]	75/65	70/55	55/45	45/40	75/65	70/55	55/45	45/40	Κ <sub>м</sub> [-]	n [-]	[kgˈ]	m	units P [W]
	1240	619	510	337	239	560	453	284	189	5,8313	1,1924	15,2	6,0	950
500	1510	740	611	404	287	671	543	341	228	7,1926	1,1845	17,9	7,1	950
	1780	855	706	469	334	775	629	396	265	8,5699	1,1767	21,5	8,5	950
	1240	729	601	396	281	660	534	334	223	6,8681	1,1924	17,5	6,6	950
600	1510	872	719	476	339	790	640	402	268	8,4713	1,1845	20,5	7,9	950
	1780	1007	832	552	394	913	741	467	313	10,0934	1,1767	24,7	9,4	950

 $\label{eq:characteristic equations: } \Phi = K_{\underline{M}} \cdot \Delta T^n \left[ \frac{W}{m} \right], \quad \ \Delta T = \frac{t_1 + t_2}{2} - t_{_1}[K]$ 

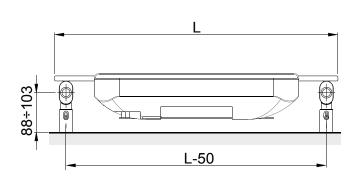
 $t_{_1}$  – temperature water-in,  $t_{_2}$  – temperature water-out,  $t_{_i}$  – relative air temperature

## **KORATHERM** AQUAPANEL B/B-ER DATA FOR WALL MOUNTING

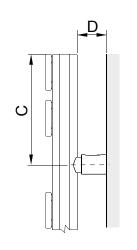




H [mm]	A [mm]	C [mm]
1240	630	305
1510	900	305
1780	1170	305







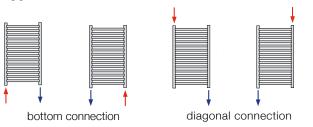
## KORALUX LINEAR MAX B



#### **Technical Data**

Height H	1215, 1495, 1810 mm
Length L	500, 600 mm
Depth B	35 mm
Connecting pitch	<b>h = L</b> - 30 mm
Connecting thread	4 x G 1/2" inside
Highest allowed working pressure	10 bar
Test presure	13 bar
Maximum water temperature	110 °C
Flow coefficient	$A_T = 2.1 \times 10^{-4} \text{ m}^2$
Coefficient of resistance	<b>ξ</b> <sub>T</sub> = 1,8

#### Type of connection



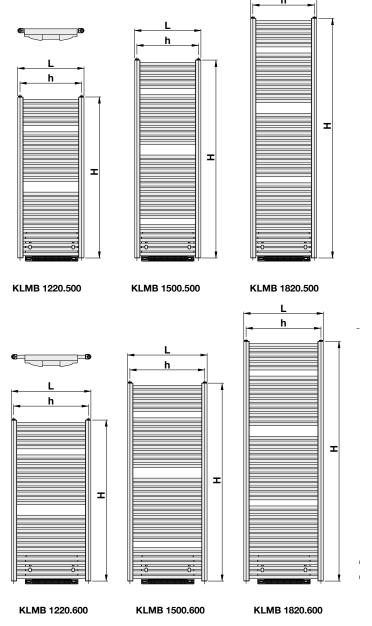
#### **Description**

**KORALUX LINEAR MAX B** is a towell rail radiator with **bottom connection** pitch **h** derived from its length **L**. The design of the radiator also allows for **diagonal connection**.

An independent electric electric booster is mounted on the radiator. It can serve as a separate heat source or as an additional heat source during normal operation of the radiator.

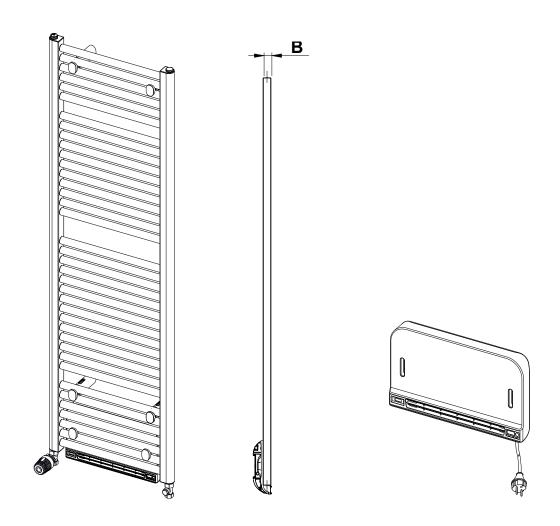
Steel tubes Ø 24 mm Steel profile 41 x 35 mm

#### **Overview of types**



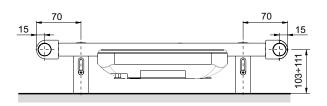
## KORALUX LINEAR MAX B

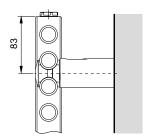




#### **Fitting**

The delivered set for mounting on the wall contains 4 pcs of special plastic brackets in chrome, screws, dowel plugs and mounting instructions.





#### **ELECTRIC INPUT P [W]**

Model number	Electrical input of electric booster P [W]	М <sub>с</sub> [kg]
KLMB 1220.500	950	13,6
KLMB 1220.600	950	15,4
KLMB 1500.500	950	16,1
KLMB 1500.600	950	18,3
KLMB 1820.500	950	19,2
KLMB 1820.600	950	22,0

 $M_c = total$  weight of the radiator including the electric booster

## KORALUX LINEAR MAX B-ER



#### **Technical Data**

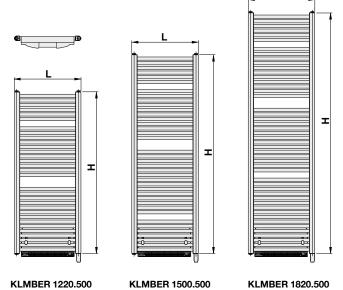
Height H	1215, 1495, 1810 mm		
Length L	500, 600 mm		
Depth B	35 mm		

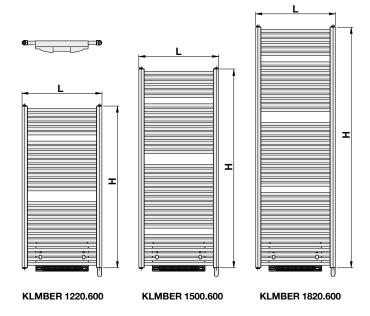
#### **Description**

**KORALUX LINEAR MAX B-ER** is a direct heating electric towel rail radiator fitted with a electric booster and an electric heating element. To achieve optimal thermal comfort, the control unit can independently control both of these heat sources.

Steel tubes  $\emptyset$  24 mm Steel profile 41 x 35 mm

#### **Overview of types**

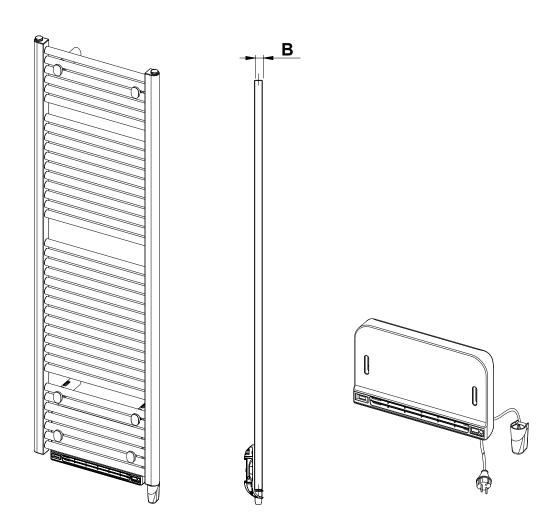




Guidelines for ordering are described on page 27.

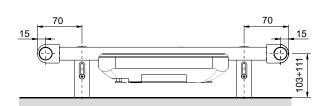
## KORALUX LINEAR MAX B-ER

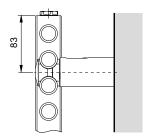




#### **Fitting**

The delivered set for mounting on the wall contains 4 pcs of special plastic brackets in chrome, screws, dowel plugs and mounting instructions.





#### **ELECTRIC INPUT P [W]**

Model number	Electrical input of electric booster P [W]	Electrical input el. heating element P [W]	M <sub>c</sub> [kg]
KLMBER 1220.500	950	600	21,2
KLMBER 1220.600	950	700	24,2
KLMBER 1500.500	950	700	25,6
KLMBER 1500.600	950	800	29,2
KLMBER 1820.500	950	900	30,9
KLMBER 1820.600	950	1000	35,2

 $\rm M_{c}$  = total weight of the radiator including the electric radiator, electric booster and filling

## KORALUX LINEAR MAX B

## HEAT OUTPUT Q [W] FOR WATER AS A HEAT-CARRYING AGENT CERTIFIED TO EN 442

#### BASIC TECHNICAL PARAMETERS

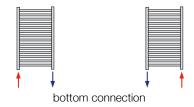
Madel	Model number	н	L	h	t <sub>1</sub> /t <sub>2</sub>		Q	[W] pro t	[°C]		Nominal heat output	Temperature exponent n [ - ]	Radiator weight	Water volume	Max. heat output	Hot air input units P [W]
Model	number	[mm]	[mm]	[mm]	[°C]	15	18	20	22	24	Q <sub>N</sub> [W] (75/65/20°C)		weight M <sub>τ</sub> [kg]	Volume V <sub>T</sub> [1]	E - element P [W]*	
					75/65	696	648	617	586	555						
KLMB	1220.500	1215	500	470	70/55	578	532	502	473	443	617	1,2650	13,6	7,6	600	950
					55/45	393	351	323	296	270						
					75/65	831	774	736	699	662						
KLMB	1220.600	1215	600	570	70/55	690	635	599	563	528	736	1,2695	5 15,4	8,8	700	950
					55/45	468	418	385	353	321						
		1495			75/65	856	798	759	721	683	759					950
KLMB	1500.500		500	470	70/55	711	655	618	581	545		1,2675	16,1	9,3	700	
					55/45	483	431	397	364	331						
					75/65	1022	952	906	860	815						
KLMB	1500.600	1495	600	570	70/55	849	782	738	694	651	906	1,2647	18,3	10,8	800	950
					55/45	577	515	475	435	396						
					75/65	1042	970	923	876	830						
KLMB	1820.500	1810	500	470	70/55	865	796	751	706	662	923	1,2704	19,2	11,5	900	950
					55/45	587	524	482	442	402						
					75/65	1241	1157	1101	1046	991						950
KLMB	1820.600	1810	600	570	70/55	1032	951	897	844	792	1101	1,2592	22,0	22,0 13,3	1000	
					55/45	703	628	579	531	483						

<sup>\*</sup> Stated maximum output values of the electric heating element apply for combined heating.

Characteristic conjections (A. J. a. J. lb., AT (c. s. H)	K <sub>T</sub>	а	b	c <sub>o</sub>	C <sub>1</sub>
Characteristic equation: $\Phi = K_T \bullet L^a \bullet H^b \bullet \Delta T^{(c_0+c_1,H)}$	9,84220 x 10 <sup>-6</sup>	0,9681392	0,9869175	1,2540313	3,58067 x 10 <sup>-6</sup>

#### The given values of heat outputs apply to the illustrated types of radiator connections:

#### KLMB



## KORALUX LINEAR MAX B



## HEAT OUTPUT Q [W] FOR WATER AS A HEAT-CARRYING AGENT CERTIFIED TO EN 442

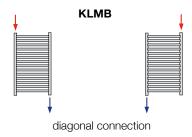
#### BASIC TECHNICAL PARAMETERS

Model	Model number	н	L	h	t <sub>1</sub> /t <sub>2</sub>		Q	[W] pro t <sub>i</sub>	[°C]		Nominal heat output	Temperature exponent	Radiator weight	Water volume	Max. heat output	Hot air input units
Wiodei	mamber	[mm]	[mm]	[mm]	[°C]	15	18	20	22	24	Q <sub>N</sub> [W] (75/65/20°C)	n[-]	M <sub>T</sub> [kg]	ν <sub>τ</sub> [1]	E - element P [W]*	P [W]
					75/65	743	691	657	623	590						
KLMB	1220.500	1215	500	470	70/55	615	566	533	501	470	657	1,2852	13,6	7,6	600	950
					55/45	415	370	341	312	284						
					75/65	891	829	789	749	709						
KLMB	<b>(LMB 1220.600</b> 12	1215	600	600 570	70/55	739	680	641	603	565	789	1,2762	15,4	8,8	700	950
					55/45	500	446	411	376	342						
		1495			75/65	923	858	816	774	733	816					950
KLMB	1500.500		500	500 470	70/55	764	702	661	622	582		1,2919	16,1	9,3	700	
					55/45	515	458	422	386	351						
					75/65	1106	1029	979	929	880						
KLMB	1500.600	1495	600	570	70/55	917	843	795	747	700	979	1,2821	18,3	10,8	800	950
					55/45	620	552	509	466	423						
					75/65	1139	1059	1006	954	903						
KLMB	1820.500	1810	500	470	70/55	941	865	814	765	716	1006	1,2995	19,2	11,5	900	950
					55/45	633	563	518	474	430						
					75/65	1364	1269	1206	1144	1083	1206					
KLMB	1820.600	1810	600	570	70/55	1129	1038	978	919	861		1,2890	22,0 13,3	1000	950	
					55/45	762	678	624	571	519						

<sup>\*</sup> Stated maximum output values of the electric heating element apply for combined heating.

Characteristic annuation of IV I a I lib AT (a to H)	K <sub>T</sub>	а	b	c <sub>o</sub>	C <sub>1</sub>
Characteristic equation: $\Phi = K_T \bullet L^a \bullet H^b \bullet \Delta T^{(c_0+c_1,H)}$	1,79486 x 10 <sup>-5</sup>	0,9970127	0,8795569	1,2322031	3,12713 x 10 <sup>-5</sup>

#### The given values of heat outputs apply to the illustrated types of radiator connections:



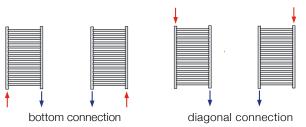
## KORALUX LINEAR COMFORT B



#### **Technical Data**

Height H	1220, 1500,1820 mm
Length L	500, 600 mm
Depth B	35 mm
Connecting pitch	<b>h = L</b> - 30 mm
Connecting thread	4 x G 1/2" inside
Highest allowed working pressure	10 bar
Test presure	13 bar
Maximum water temperature	110 °C
Flow coefficient	$A_T = 2.1 \times 10^{-4} \text{ m}^2$
Coefficient of resistance	<b>ξ</b> <sub>T</sub> = 1,8

#### Type of connection



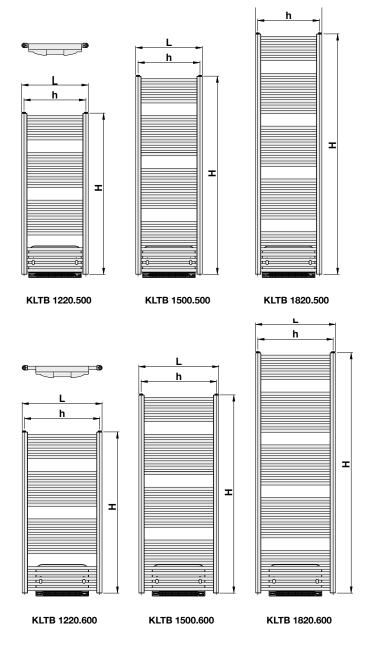
#### **Description**

**KORALUX LINEAR COMFORT** is a towel rail radiator with a **bottom connection** pitch **h** derived from its length **L**. The design of the radiator also allows for **diagonal connection**.

An independent electric electric booster is mounted on the radiator. It can serve as a separate heat source or as an additional heat source during normal operation of the radiator.

 $\begin{array}{ll} \text{Steel tubes} & \textit{\O} \ 24\,\text{mm} \\ \text{Steel profile} & 41\,\,\text{x} \ 35\,\text{mm} \\ \end{array}$ 

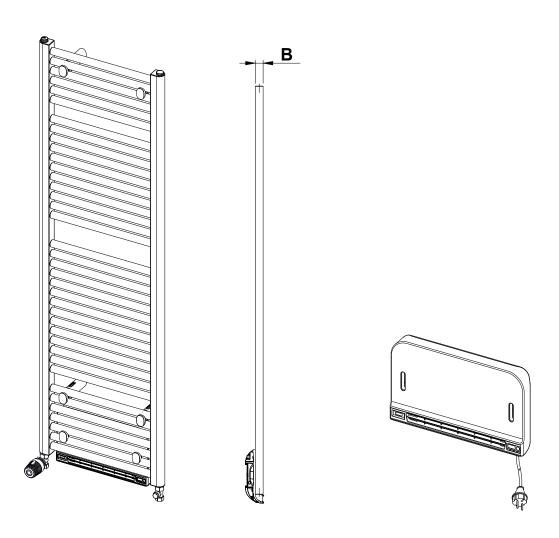
#### **Overview of types**



Guidelines for ordering are described on page 27.

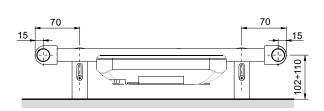


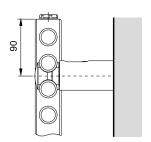




#### **Fitting**

The delivered set for mounting on the wall contains 4 pcs of special plastic brackets in chrome, screws, dowel plugs and mounting instructions.





#### **ELECTRIC INPUT P [W]**

Model number	Electrical input of electric booster P [W]	M <sub>c</sub> [kg]
KLTB 1220.500	950	11,9
KLTB 1220.600	950	13,3
KLTB 1500.500	950	14,5
KLTB 1500.600	950	16,2
KLTB 1820.500	950	16,9
KLTB 1820.600	950	19,0

 $M_{_{\rm C}} =$  total weight of the radiator including the electric booster

## KORALUX LINEAR COMFORT B-ER



#### **Technical Data**

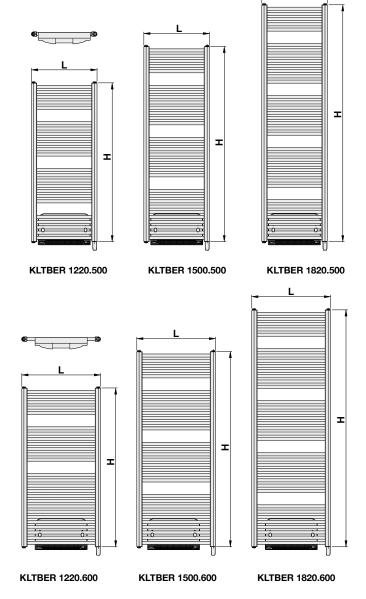
Height H	1220, 1500, 1820 mm
Length L	500, 600 mm
Depth B	35 mm

#### **Description**

**KORALUX LINEAR COMFORT B-ER** is a direct heating electric towel rail radiator fitted with a electric booster and an electric heating element. To achieve optimal thermal comfort, the control unit can independently control both of these heat sources.

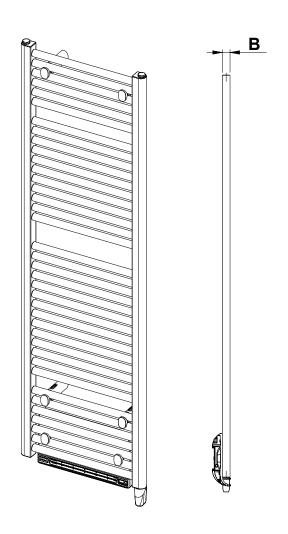
Steel tubes Ø 24 mm Steel profile 41 x 35 mm

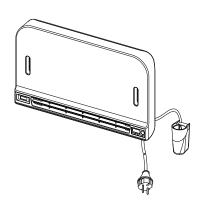
#### **Overview of types**





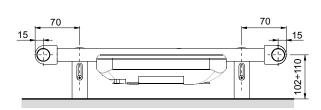


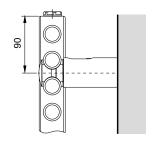




#### **Fitting**

The delivered set for mounting on the wall contains 4 pcs of special plastic brackets in chrome, screws, dowel plugs and mounting instructions.





#### **ELECTRIC INPUT P [W]**

Model number	Electrical input of electric booster P [W]	Electrical input el. heating element P [W]	M <sub>c</sub> [kg]
KLTBER 1220.500	950	500	18,7
KLTBER 1220.600	950	600	20,8
KLTBER 1500.500	950	600	22,8
KLTBER 1500.600	950	700	25,7
KLTBER 1820.500	950	800	26,9
KLTBER 1820.600	950	900	30,4

 $M_c$  = total weight of the radiator including the electric radiator, electric booster and filling

## KORALUX LINEAR COMFORT B

#### HEAT OUTPUT Q [W] FOR WATER AS A HEAT-CARRYING AGENT CERTIFIED TO EN 442

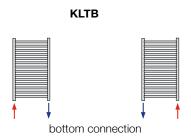
#### BASIC TECHNICAL PARAMETERS

Mod	el number	н	L	h	t <sub>1</sub> /t <sub>2</sub>		Q	[W] pro t	[°C]		Nominal heat output	Temperature exponent	Radiator weight	Water volume	Max. heat output	Hot air input units
IVIOU	ei numbei	[mm]	[mm]	[mm]	[°C]	15	18	20	22	24	Q <sub>N</sub> [W] (75/65/20°C)	n[-]	M <sub>T</sub> [kg]	Volume V <sub>T</sub> [1]	E - element P [W]*	P [W]
					75/65	623	581	553	525	498						
KLTB	1220.500	1220	500	470	70/55	519	478	451	425	399	553	1,2532	9,5	6,5	500	950
					55/45	354	316	292	267	244						
					75/65	732	683	650	618	586						
KLTB	1220.600	1220	600	570	70/55	610	562	531	499	469	650	1,2499	10,9	7,4	600	950
					55/45	416	372	343	315	287						
				75/65	774	722	687	653	619							
KLTB	KLTB 1500.500	1500	500	00 470	70/55	644	593	560	527	495	687	1,2573	12,1	8,2	600	950
					55/45	439	392	361	331	302						
					75/65	911	849	808	768	728						
KLTB	1500.600	1500	600	570	70/55	758	698	659	620	582	808	1,2543	13,8	9,4	700	950
					55/45	517	462	426	390	356						
					75/65	956	891	848	805	763						
KLTB	KLTB 1820.500	1820	500	470	70/55	795	732	691	650	610	848	1,2621	14,5	9,4	800	950
					55/45	541	483	445	408	372						
					75/65	1123	1046	996	946	897						
KLTB	1820.600	1820	600	570	70/55	934	860	812	764	717	996	1,2594	16,6	11,3	900	950
					55/45	636	568	523	480	437						

<sup>\*</sup> Stated maximum output values of the electric heating element apply for combined heating.

Characteristic equation: $\Phi = K_{\tau} \bullet L^{a} \bullet H^{b} \bullet \Delta T^{(c_{0}+c_{\tau},H)}$	K <sub>T</sub>	а	b	C <sub>0</sub>	C <sub>1</sub>
Characteristic equation: $\Phi = K_T \bullet L^a \bullet H^a \bullet \Delta I \bullet 0.001.001$	2,26531 x 10 <sup>-5</sup>	0,8842066	0,9284211	1,2280052	2,37639 x 10 <sup>-5</sup>

The given values of heat outputs apply to the illustrated types of radiator connections:







#### HEAT OUTPUT Q [W] FOR WATER AS A HEAT-CARRYING AGENT CERTIFIED TO EN 442

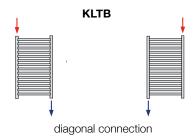
#### BASIC TECHNICAL PARAMETERS

Mode	el number	н	L	h	t <sub>1</sub> /t <sub>2</sub>		Q	[W] pro t	[°C]		Nominal heat output	Temperature exponent	Radiator weight	Water volume	Max. heat output	Hot air input units
Mode	a number	[mm]	[mm]	[mm]	[°C]	15	18	20	22	24	Q <sub>N</sub> [W] (75/65/20°C)	n [ - ]	M <sub>T</sub> [kg]	Volume V <sub>T</sub> [1]	E - element P [W]*	P [W]
			500	470	75/65	679	632	601	571	540						
KLTB	1220.500	1220	495	465	70/55	563	518	489	459	431	601	1,2744	9,5	6,5	500	950
				.00	55/45	381	340	313	287	261						
					75/65	793	739	703	668	633						
KLTB	1220.600	1220	600	0 570	70/55	659	607	572	539	505	703	1,2638	10,9	7,4	600	950
					55/45	448	400	369	338	308						
	KLTB 1500.500	1500			75/65	844	786	747	709	671	747					950
KLTB			500	470	70/55	699	643	606	570	534		1,2853	12,1	8,2	600	
					55/45	472	421	387	355	322						
					75/65	987	919	874	830	786						
KLTB	1500.600	1500	600	570	70/55	818	753	710	667	626	874	1,2792	13,8	9,4	700	950
					55/45	554	494	455	416	379						
					75/65	1042	969	921	873	827						
KLTB	1820.500	1820	500	470	70/55	862	792	746	701	656	921	1,2976	14,5	9,9	800	950
					55/45	580	516	475	434	394						
					75/65	1220	1134	1078	1022	968				9,4		
KLTB	1820.600	1820	600	570	70/55	1009	927	873	820	768	1078	1,2967	16,6		900	950
			550		55/45	679	604	556	508	462						

 $<sup>^{\</sup>star}$  Stated maximum output values of the electric heating element apply for combined heating.

Observation of IV Is IIb AT 6+6 H	K <sub>T</sub>	а	b	c <sub>o</sub>	C <sub>1</sub>
Characteristic equation: $\Phi = K_T \bullet L^a \bullet H^b \bullet \Delta T^{(c_0+c_1,H)}$	2,88645 x 10 <sup>-5</sup>	0,8625333	0,9234257	1,2296735	2,46711 x 10 <sup>-5</sup>

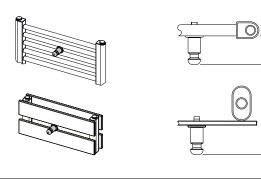
The given values of heat outputs apply to the illustrated types of radiator connections:



## **ACCESSORIES**

## Towel peg for radiators KORATHERM AQUAPANEL, KORALUX LINEAR MAX a KORALUX LINEAR COMFORT

- · easy mounting and dismounting
- made of stainless steel
- maximum vertical load of the rack is 50 N (up to 5 kg)
- the set includes Towel peg 1 item

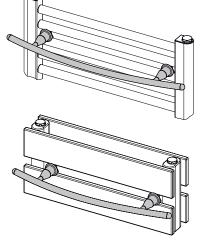




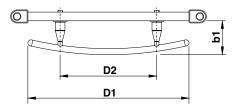
Туре	Ordering code
Towel peg KORALUX (KORATHERM AQUAPANEL)	Z-D037

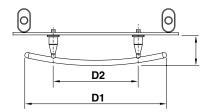
## Towel hanger for radiators KORATHERM AQUAPANEL, KORALUX LINEAR MAX a KORALUX LINEAR COMFORT

- easy mounting and dismounting
- made of stainless steel
- $\bullet$  choice of the length of the dryer D1 depends on the length of the heating element L
- maximum vertical load of the towel hanger is 50 N (up to 5 kg)
- the set includes towel hanger 1 item









Туре	D1 [mm]	D2 [mm]	b1 [mm]	Ordering code
Towel hanger for KORALUX 370 (KORATHERM AQUAPANEL)	370	222	78	Z-D033
Towel hanger for KORALUX 518 (KORATHERM AQUAPANEL)	518	370	93	Z-D034

## DATA FOR ORDERING



#### **KORATHERM AQUAPANEL B**

Mod	el number	H [mm]	L [mm]	Ordering code
K10AB	1240.500	1240	500	K10A124050-00C10
K10AB	1240.600	1240	600	K10A124060-00C10
K10AB	1510.500	1510	500	K10A151050-00C10
K10AB	1510.600	1510	600	K10A151060-00C10
K10AB	1780.500	1780	500	K10A178050-00C10
K10AB	1780.600	1780	600	K10A178060-00C10

#### **KORATHERM AQUAPANEL B-ER**

Mode	l number	H [mm]	L [mm]	Ordering code
K10ABE	1240.500	1240	500	K10A124050-00B10
K10ABE	1240.600	1240	600	K10A124060-00B10
K10ABE	1510.500	1510	500	K10A151050-00B10
K10ABE	1510.600	1510	600	K10A151060-00B10
K10ABE	1780.500	1780	500	K10A178050-00B10
K10ABE	1780.600	1780	600	K10A178060-00B10

#### **KORALUX LINEAR MAX B**

Mod	el number	H [mm]	L [mm]	Ordering code
KLMB	1220.500	1215	500	KLM-122050-00C10
KLMB	1220.600	1215	600	KLM-122060-00C10
KLMB	1500.500	1495	500	KLM-150050-00C10
KLMB	1500.600	1495	600	KLM-150060-00C10
KLMB	1820.500	1810	500	KLM-182050-00C10
KLMB	1820.600	1810	600	KLM-182060-00C10

#### **KORALUX LINEAR MAX B-ER**

Model number	H [mm]	L [mm]	Ordering code
KLMEB 1220.450	1215	500	KLM-122050-00B10
KLMEB 1220.600	1215	600	KLM-122060-00B10
KLMEB 1500.450	1495	500	KLM-150050-00B10
KLMEB 1500.600	1495	600	KLM-150060-00B10
KLMEB 1820.450	1810	500	KLM-182050-00B10
KLMEB 1820.600	1810	600	KLM-182060-00B10

#### **KORALUX LINEAR COMFORT B**

Mod	del number	H [mm]	L [mm]	Ordering code
KLTB	1220.500	1220	500	KLT-122050-00C10
KLTB	1220.600	1220	600	KLT-122060-00C10
KLTB	1500.500	1500	500	KLT-150050-00C10
KLTB	1500.600	1500	600	KLT-150060-00C10
KLTB	1820.500	1820	500	KLT-182050-00C10
KLTB	1820.600	1820	600	KLT-182060-00C10

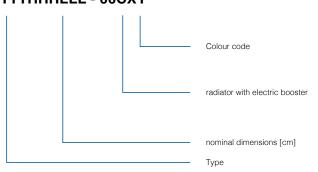
#### **KORALUX LINEAR COMFORT B-ER**

Mod	el number	H [mm]	L [mm]	Ordering code
KLTEB	1220.500	1220	500	KLT-122050-00B10
KLTEB	1220.600	1220	600	KLT-122060-00B10
KLTEB	1500.500	1500	500	KLT-150050-00B10
KLTEB	1500.600	1500	600	KLT-150060-00B10
KLTEB	1820.500	1820	500	KLT-182050-00B10
KLTEB	1820.600	1820	600	KLT-182060-00B10

#### **Code creation pattern**

(radiators B)

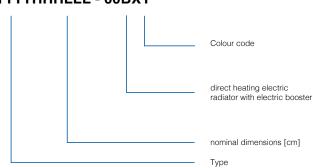
#### TTTTHHHLLL - 00CXY



#### **Code creation pattern**

(direct electric radiators B-ER)

#### TTTTHHHLLL - 00BXY



## SVÚOM PRAGUE - INFORMATION

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, gymhalls, 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, carwashing 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 FORUSING 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, moffices, 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 washbasins, 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).

## SVÚOM PRAGUE - INFORMATION



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 waterborne 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).

#### 5. Packaging

The radiators are packed in cardboard and polyethylene shrink film.

#### 6. Transport and storage

Radiators are palletized according to the manufacturer's internal regulations. Stacking pallets in layers is only possible in accordance with these regulations.

Pallets with radiators can only be transported in covered transport areas and during storage must be stored in such a way that they are protected from the weather. Storage in open and uncovered areas is inadmissible.

### GENERAL INFORMATION

#### **High Quality Finish**

The technology used guarantees long-term corrosion resistance, mechanical durability, extremely good finish and also a hygienic radiator surface. Maximum effort is made to protect the environment.

The finish is done in three basic phases:

- 1) Preparation of the steel surface includes degreasing, phosphating, and rinsing in three stages.
- 2) Putting on the first layer of paint using the cataphoretic method (KTL) and drying in an oven. This phase of treatment is of decisive importance for the long life span of the radiator.
- Putting on the final layer of paint epoxy-polyester powder is used. After it is oven dried and then cooled, the process of surface finishing is complete.

The colour is white RAL 9016.

#### **Basic Equipment**

The distributing and collector profiles are equipped with outlets with G 1/2" thread. Included with every towel rail radiator are a blanking plug and air vent and a set of fittings for fixing the radiator to the wall.

#### Use

Design radiators KORATHERM and towel rail radiators KORALUX with hot ai unit are primarily intended for heating bathrooms, toilets, kitchens, living spaces, offices, entrances and hallways of residential and public buildings. Their modern design allows them to blend in with most interiors.

Their design allows for their use in both gravity fed and pressurized hot water systems with the maximum water temperature up to 110 °C. Radiators must be installed in a professional way in hot water heating systems which are carried out professionally according to VDI 2035 with regard to the protection against damage caused by corrosion and scale.

The following main water quality attributes must be adhered to:

- pH range 8.5 9.5 (this applies for systems which do not contain aluminium)
- overall water hardness (content of Ca + Mg ions) up to 1mmol/l
- salinity within the range 300 500 µS/cm
- oxygen content max. 0.1 mg/l.

#### **Guarantee and Quality**

The manufacturer guarantees that the product is leak proof and guarantees stated heat output of KORALUX and KORATHERM radiators connected to the hot-water systems for 5 years from the date of sale. The manufacturer accepts no responsibility for deformation or damage of the radiators caused during their transport, handling, or storage. The guarantee does not apply to mechanical or other damages caused by unqualified installation of the radiators.

The company KORADO, a.s. has held a quality certificate under the norm ISO 9001 since 1997. This quality control system describes all conditions, requirements, and parameters with respect to technical, manufacturing, commercial, transport, and service issues. The customer is the main target of the entire system and his satisfaction influences the goals and plans of the company KORADO, a.s.

The ISO 9001 quality control system guarantees the customer excellent, long-lasting quality of products and services.

#### **Heat Output and Declaration of Conformity**

The stated heat outputs are determined in accordance with EN 442 in a notified laboratory.

The conformity with valid European standards was approved by Strojirensky zkusebni ustav, s.p. (Engineering Test Institute), Notified Body 1015, Hudcova 56b, 621 00 Brno, Czech Republic

### QUALITY AND SAFETY, SERVICE



#### The quality of KORATHERM and KORALUX radiators



- Quality management system according to ISO 9001
- guarantees the highest degree in achieving a permanent quality of products and all activities of KORADO, a.s. company on European as well as world-wide markets

## Safety and proof of compliance with European directives and standards for KORATHERM and KORALUX radiators

European standard EN 442 for radiators





and KORALUX are in accordance with the properties listed in the Declaration of Properties prepared according to the Regulation of the EP and Council (EU) No. 305/2011. This conformity was confirmed by the notified body No. 1015, Strojírenský zkušební ústav, s.p. Brno.

• CE marking the manufacturer confirms that KORATHERM radiators

#### Service for business partners

An expert in every situation – is one of the basic ideas of the philosophy of KORADO, a.s. in the field of service activities.

KORADO, a.s. is dedicated to the communication and exclusive attention with market partners, designers, purchasers, plumbers and offers heating engineers broad support and a complex range of technical documents and information for everyday work. The goal is clear and understandable – to create such conditions that individual professional groups have the opportunity to design, sell and install RADIK, KORATHERM radiators, convectors and KORADO ventilation units so that the end customer can use all their useful values in full. To fulfill it, KORADO, a.s. offers:

- technical catalogs for RADIK panel radiators, KORALUX tubular radiators, KORATHERM designer radiators, KORADO convectors KORAMONT fastening and assembly technology catalog and KORADO ventilation unit catalog
- technical price lists for RADIK panel radiators, KORALUX tubular radiators, KORATHERM design radiators and KORADO convectors
- · complex brochures and data sheets for individual model lines of radiators and their accessories
- freely distributable computer program KORADO for the selection and design of radiators RADIK, KORALUX and KORATHERM according to predetermined conditions
- page on the Internet with an address www.korado.com
- internet e-mail line info@korado.cz
- professional seminars in the company training center
- professional consultations within specialized exhibitions in the Czech Republic and abroad
- The current offer is published, continuously changed and supplemented on the free telephone information line and on the Internet
- Find out about the current dates of seminars in the training center, about exhibitions, about new products in the product range and about the latest information and activities of the company, KORADO, a. s. Česká Třebová

## NOTES

## NOTES





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

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

Ev. č.: 03/24.126.0 EN