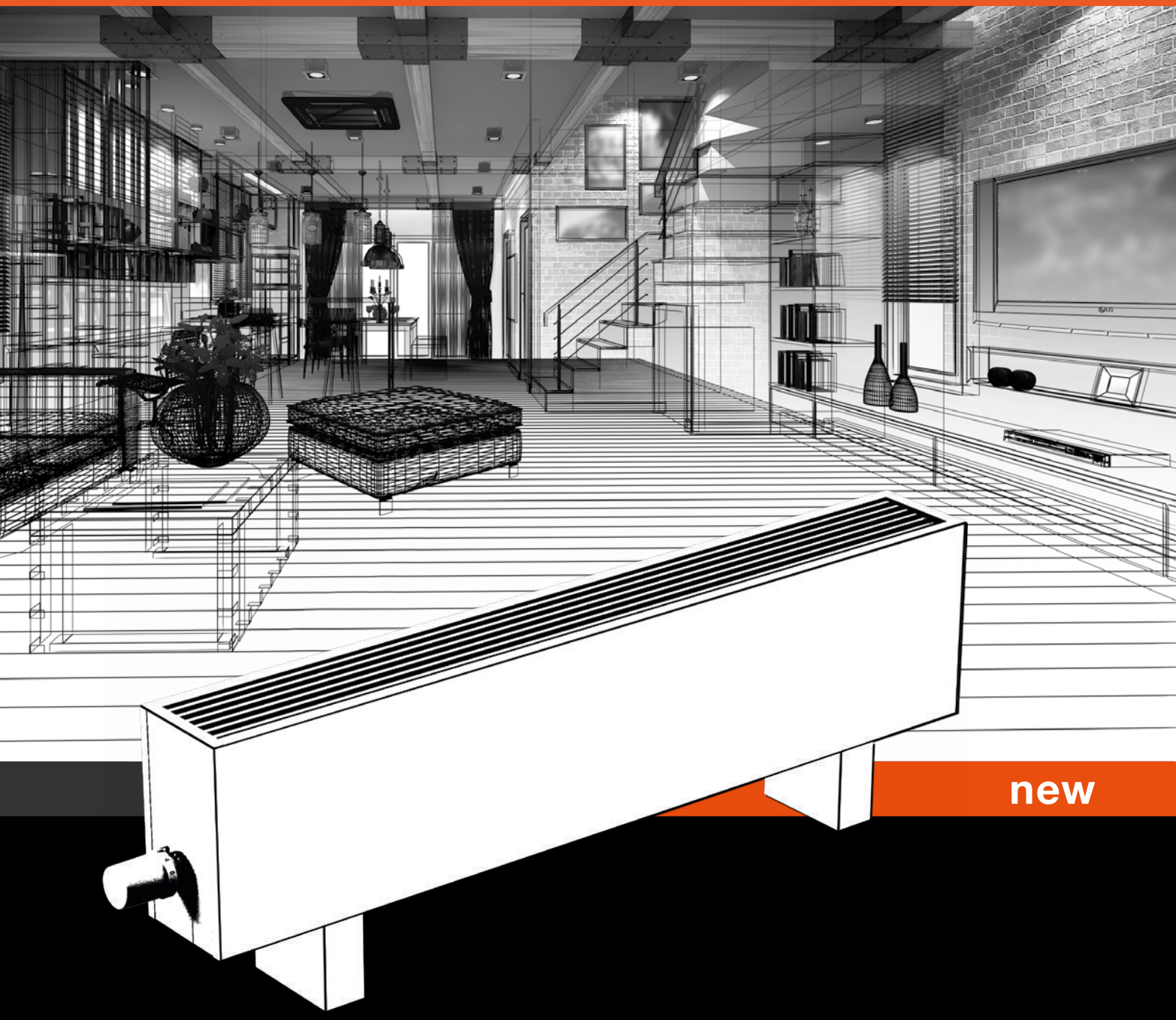
LICON®
member of KORADO Group

KORALINE

Free-Standing Convectors



new

KORADO®

2022

THE KORADO GROUP

50 YEARS OF TRADITION

QUALITY – INTEGRITY – INNOVATION – DESIGN

The KORADO Group is a reliable partner for both small and large heating, cooling and heat recovery projects. Innovation guarantees high product quality and modern design, which is the basis for long-term cooperation.

SOLUTIONS FOR BUILDINGS OF ALL KINDS

Large-scale installations for shopping centres, or domestic heating at home? Standard or specially designed radiators, a bespoke convector, ventilation or heat recovery? The KORADO Group's comprehensive product portfolio offers a wide range of technical solutions for the ideal climate and interior design.

ECONOMIC, ECOLOGICAL AND EFFECTIVE THINKING

All our products are designed to reduce the energy consumption of buildings. Our heating units guarantee optimal performance, better air quality and lower energy consumption.

LICON HEAT s.r.o.

A 50-year tradition in the manufacture of convection heaters. A member of the KORADO group since 2013. LICON HEAT s.r.o. offers tailor-made projects for every type of building.

Management kvality ISO 9001 DEKRA

EN EURONORM 16430

EN EURONORM 442

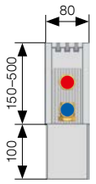
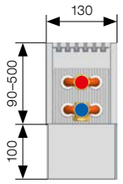
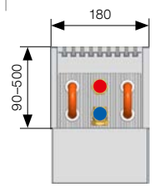
LICON HEAT s.r.o. convectors are sold all over the world. They are manufactured using the most up-to-date technology at our LICON HEAT plant in Liberec, Czech Republic.

The KORADO, a.s. Head Office and production site is a modern European plant manufacturing radiators and heating units. Our technological equipment and the layout of the 30.000 m² site ensures KORADO, a.s. looks forward to further development and growth.

PRODUCT PORTFOLIO

KORALINE Optimal LKO

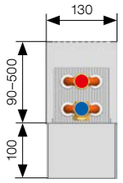
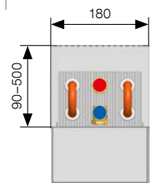
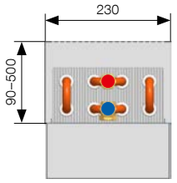
Free-standing convectors with design grilles.

Width	80	130	180	230
Height		Height		
–		90		
150		150		
230		230		
300		300		
400		400		
500		500		

See pp. 16–21

KORALINE Basic LKB

Free-standing convectors with perforated safety grille.

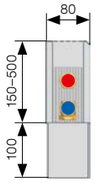
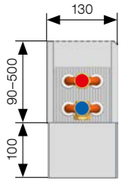
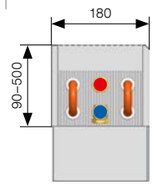
Width	130	180	230
Height			
90			
150			
230			
300			
400			
500			

See pp. 28–33

KORALINE Safe LKS

Free-standing convectors with symmetric safety pencilproof grille, robust construction with bevelled front edge and other safety features.

SAFETY DESIGN

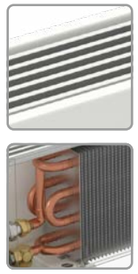
Width	80	130	180	230
Height		Height		
–		90		
150		150		
230		230		
300		300		
400		400		
500		500		

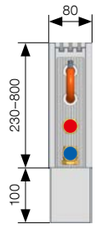
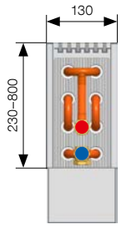
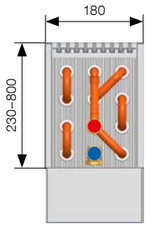
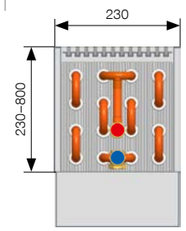
See pp. 38–43

Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm.

KORALINE Power LKW

Free-standing convectors with design grilles and high-performance heat exchanger.

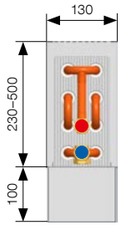
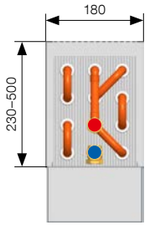
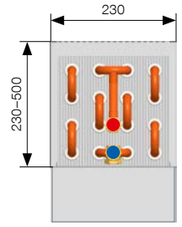


Width	80	130	180	230
Height				
230				
300				
400				
500				
600				
700				
800				

See pp. 22–27

KORALINE Combi LKC

Free-standing convectors with perforated safety grille and high-performance heat exchanger.

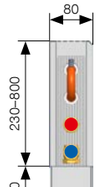
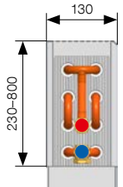
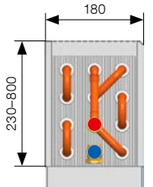
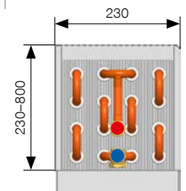
Width	130	180	230
Height			
230			
300			
400			
500			

See pp. 34–37

KORALINE Max LKM

Free-standing convectors with symmetric safety pencilproof grille, robust construction with bevelled front edge, high-performance heat exchanger, and other safety features.

SAFETY DESIGN

Width	80	130	180	230
Height				
230				
300				
400				
500				
600				
700				
800				

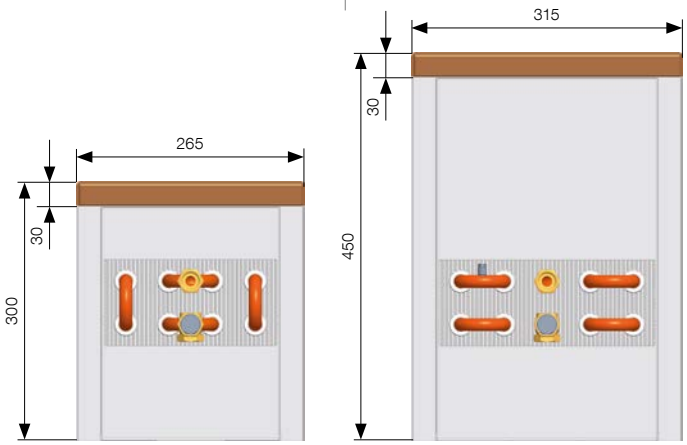
See pp. 44–49

Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm.

KORALINE Optimal LDO with wooden bench top

Free-standing convectors with wooden bench top suitable for dry environments.

Width	265	315
Height		
300		
450		

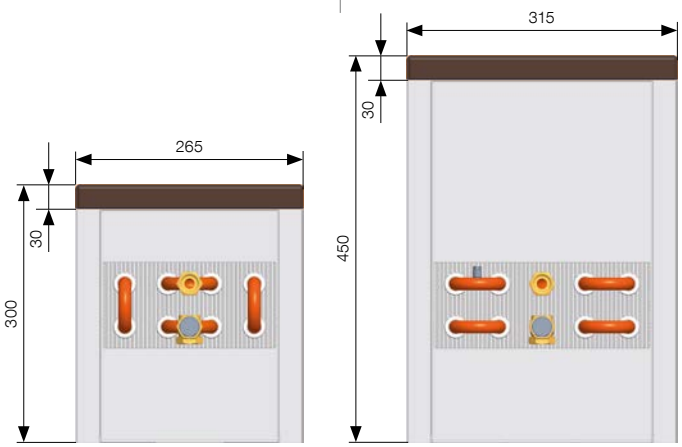


See pp. 58

KORALINE Pool LDP with wooden bench top

Free-standing convectors with wooden bench top and lacquered exchanger suitable for humid environments.

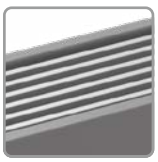
Width	265	315
Height		
300		
450		



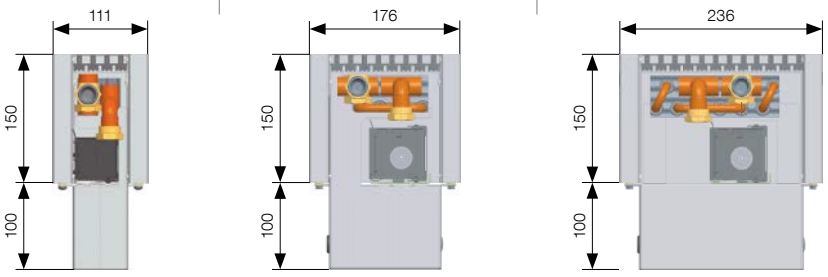
See pp. 59

KORALINE OLOC with fan

Bench convectors with design grille and high-performance electric fan.



Width	111	176	236
Height			
150			



Floor-level bracket height above floor level for all KORALINE OLOC models is 100 mm. Measurements in mm.

See pp. 86–92


$\Delta t = \frac{(t_1 + t_2)}{2} - t_1$

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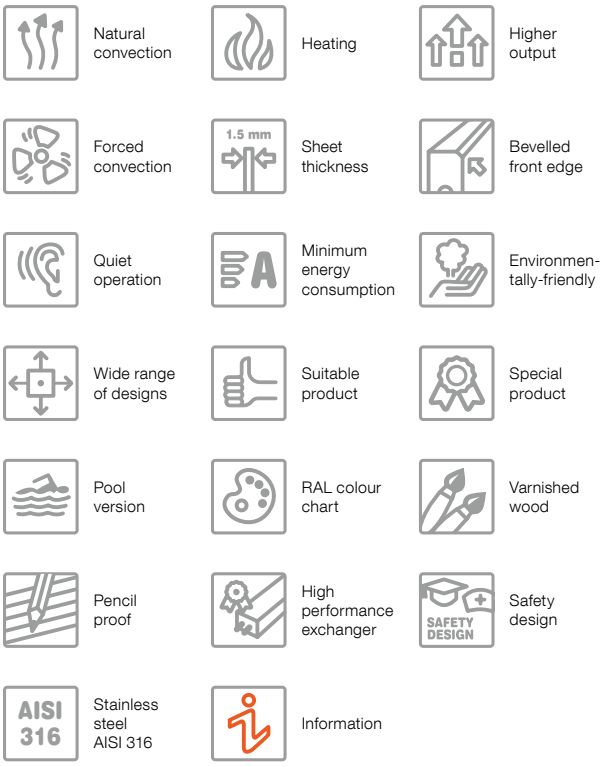
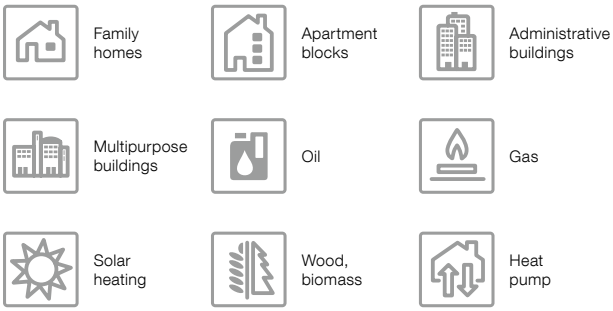
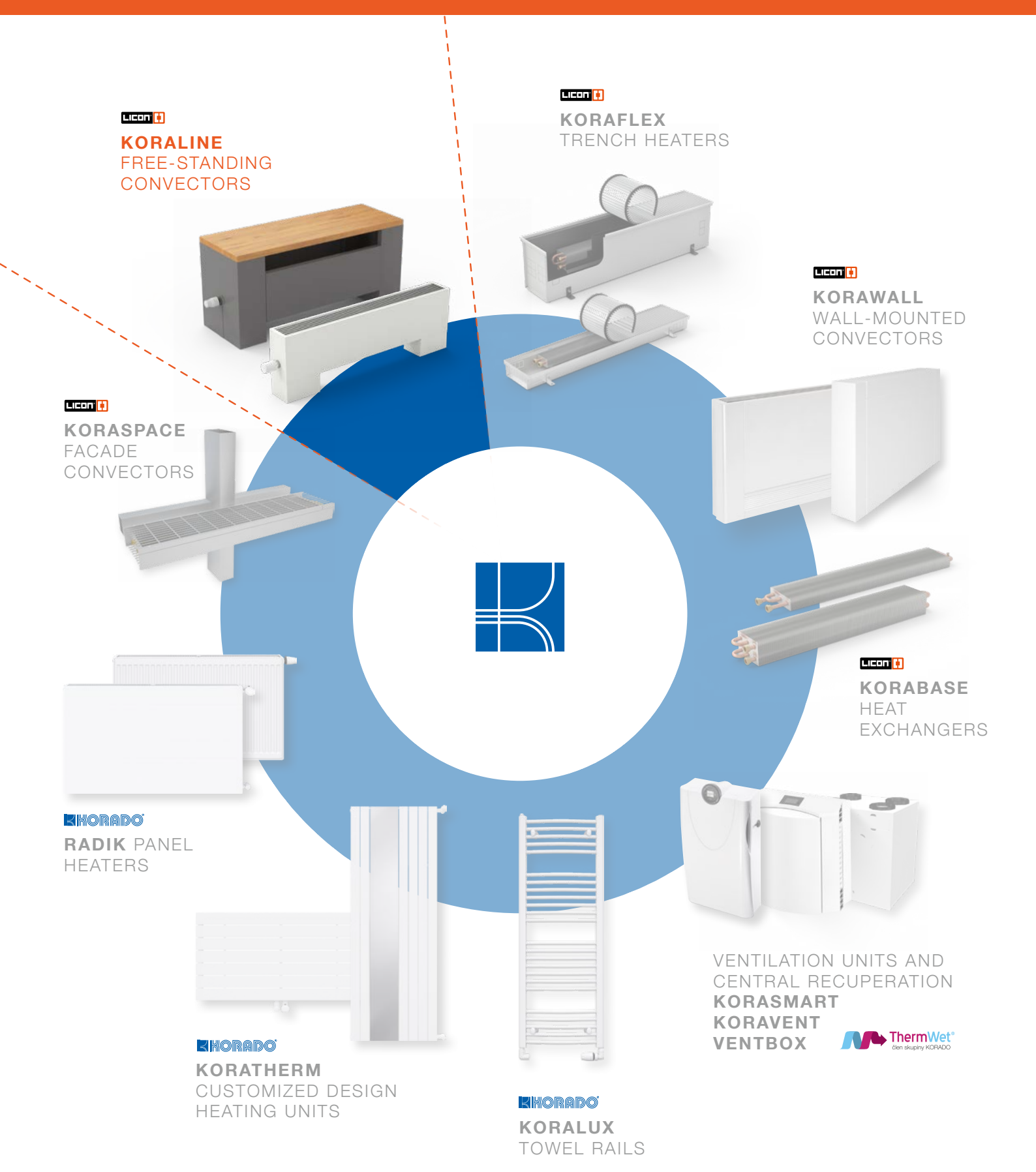


Suitable applications of convectors





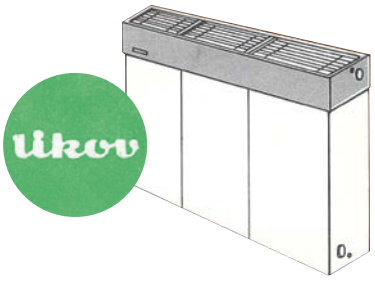
PRODUCT PORTFOLIO

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

A story of quality spanning over half a century

1968

The **first LIKOV steel convectors** were manufactured in Liberec in 1968. They were marketed under the UNIKONTHERM brand.



1995

1995 saw significant **modernisation of our product range**, including the production of our **first trench heaters**.

2004

The company underwent a comprehensive transformation in 2004. **LICON HEAT s.r.o.** replaced the former LIKOV. The **product range was revolutionized** with the introduction of **new heat exchanger technology**.

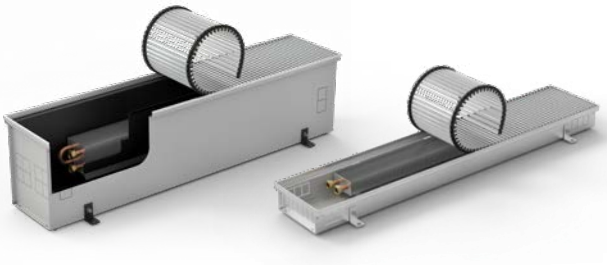

2013

In 2013, **LICON became a member of the KORADO group**. This resulted in expansion of the product range.

2018

2018 saw the launch of a **new generation of modern convectors** and expansion of our product range, with significant emphasis on design.

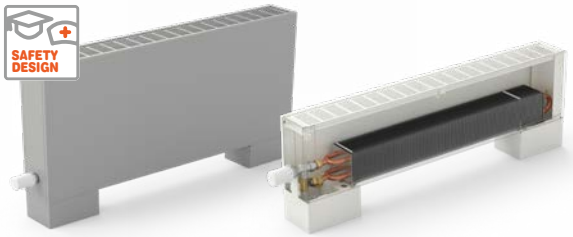
2020



An innovative range of free-standing convectors was introduced with natural and forced convection. This significantly expanded the range of trench heaters.

2022

In 2022, the KORALINE free-standing convectors portfolio was significantly expanded to include new types, focusing on safety, design and high performance.



What next?

We will continue improving our products using the most up-to-date technologies and all our experience and knowledge gathered during 54 years of convector production.

Why choose LICON convectors?

Ideal for every interior…

Our range includes trench, wall-mounted, free-standing and custom-made convectors. Installation is non-intrusive, including in historical buildings.

Effective heating…

Convectors offer rapid heat build-up, high efficiency, low energy consumption. Operation is both economical and environmentally friendly.

A safe solution…

The KORALINE Safe and Max ranges are characterised by a number of safety features that make them ideal for use in schools, healthcare and care facilities.

Easy installation and maintenance...

Extensive range…

Our extensive range of designs caters for every interior, for both humid and dry environments. The range includes convectors that achieve high heat outputs with a design to enhance even the most demanding interior.

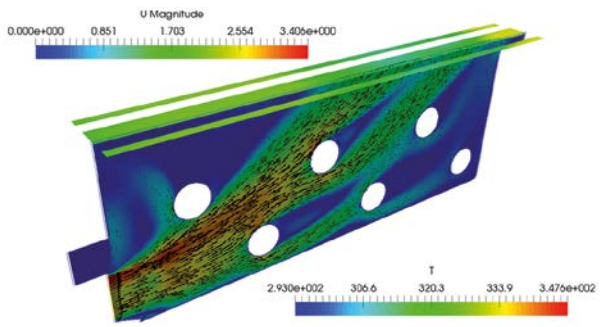
Top technology…

Convectors are compatible with heating systems operated with all types of heat sources (heat pumps, gas, electricity, solar heat, wood and biomass), including systems with a low temperature gradient. Convectors provide a safe solution, with a low surface temperature not exceeding 43 °C. KORALINE convectors include a high quality cover grille, including the option of a pencil proof version to ensure increased user safety. Forced convection convectors are 0–10 voltage controlled and powered by 24 V DC.

Did you know…

- The KORADO Group has its own research and development centre, equipped with EN 442 thermal output and EN 16430 heat and cooling output test chambers.

- LICON HEAT s.r.o. insists on using the most modern research and development methods, and work closely with leading experts in the field, including higher education institutions (the Technical University of Liberec, the Czech Technical University in Prague, etc.).



- We use the most up-to-date machines for the manufacture of our products, employing the principles of lean production. Products are manufactured in the shortest possible time while maintaining maximum materials and design quality.
- LICON HEAT s.r.o. is a certified ISO 9001 Quality Management supplier. Our products are manufactured and tested according to ČSN EN 442 and ČSN EN 16430 standards. CE marking indicates that LICON convectors conform to the conditions set out in the Declaration of Performance in accordance with Regulation No. 305/2011 of the European Parliament and of the European Council, and further confirmed by notified authority No. 1015, the Engineering Test Institute, Brno.

KORALINE Combi LKC free-standing convector

KORALINE free-standing convectors with natural convection

KORALINE FREE-STANDING CONVECTORS WITH NATURAL CONVECTION

SPECIALLY DESIGNED HEAT EXCHANGER

Specially designed Al/Cu heat exchanger with twice the area of uniquely shaped fins, incorporated in the Power, Combi, Max models and guaranteeing higher heat output.

SAFETY DESIGN

New safety features built into the Safe and Max models allow them to be placed in educational or medical facilities, or other interiors where increased emphasis is placed on safety.

WIDE PORTFOLIO

The significant extension of the free-standing convector portfolio guarantees and facilitates the ideal choice for all kinds of spaces, even those with atypical dimensions.

INCREASED HEAT OUTPUT

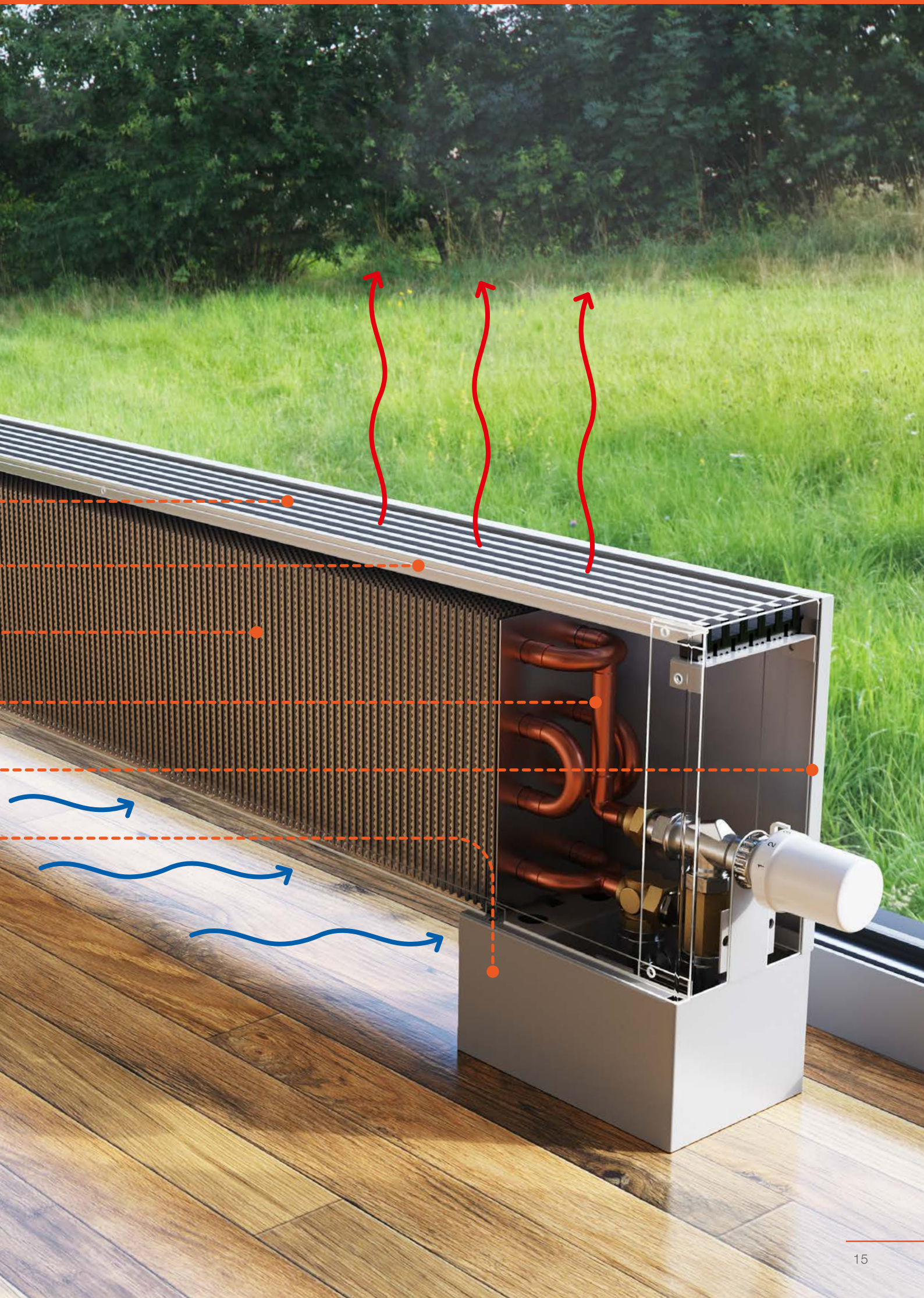
More efficient heating translates into financial savings and increased thermal comfort in the room.

PRECISION WORKMANSHIP

Quality technical processing of free-standing convectors is featured as standard.

CUSTOMIZED SOLUTIONS

In addition to the wide range of standard types, customized atypical KORALINE convectors are available.



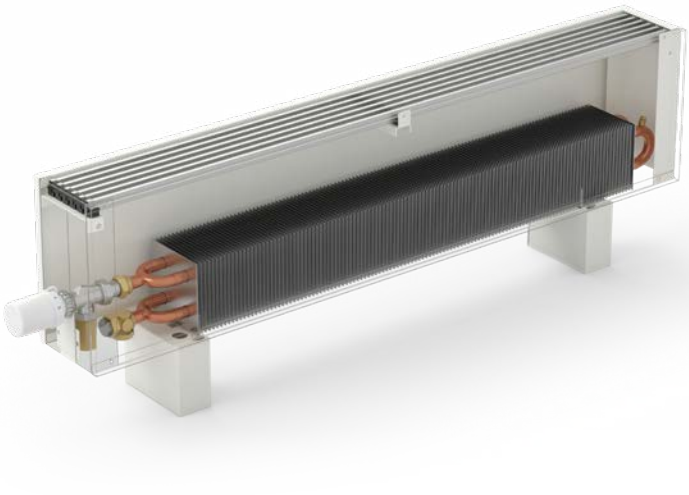
KORALINE Optimal LKO

Free-standing convectors with natural convection and design grille

KORALINE Optimal LKO

Specifications

Height	90, 150, 230, 300, 400, 500 mm
Width	80, 130, 180, 230 mm
Length	600, 700, 800, 900, 1 000, 1 100, 1 200, 1 400, 1 600, 1 800, 2 000, 2 200, 2 400, 2 600, 2 800, 3 000 mm
Output	from 149 to 6 612 W
Max. operating pressure	1,2 MPa
Max. operating temperature	110 °C
Max. surface temperature	40 °C
Max. surface temperature	inner G 1/2"
Connection method	lower (recommended), side



The **KORALINE Optimal LKO** is our most popular model range of low surface temperature convectors, offering the optimal combination of design and heat output. The KORALINE Optimal LKO model range is made of galvanised sheet steel and fitted with a high quality aluminium silver elox grille. Due to the diverse portfolio and the optimal output, the convectors in this series are ideal for heating private houses, residential and office buildings.

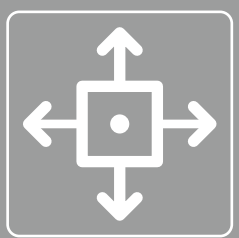
Standard contents

- silver elox aluminium grille
- galvanized steel casing (RAL 9016 white lacquer)
- Al/Cu heat exchanger for universal connections, low water content, bleed valve, uniquely shaped fins
- magnetic side cover in casing colour
- axial thermostatic valve, thread M 30 × 1.5 (see p. 66)
- extension nipple for convectors from 150 mm in height (see p. 66)
- floor-level brackets
- wall fixing mounts for convectors from 400 mm in height (see p. 53)
- safely packaged with assembly instructions

Optional accessories

- further RAL lacquers for casings available
- floor-level bracket casings (see p. 52)
- wall brackets (see p. 53)
- sub-floor brackets (see p. 53)
- elbow or straight lockshield (see p. 68)
- elbow or straight thermostatic valve (see p. 68)
- TEP 230 or TEP 24 thermoelectric actuator (see p. 66)
- SIEMENS RAA21 or RDE 100.1 room thermostat (see p. 68)
- QAA32 room temperature sensor (see p. 94)
- thermostatic head (see p. 67)
- thermostatic head with incorporated control and immersion remote sensor (see p. 67)

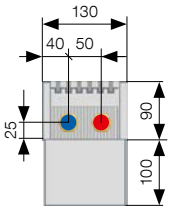
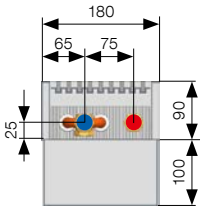
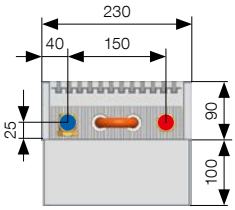
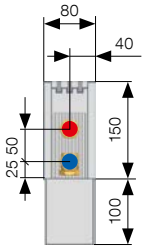
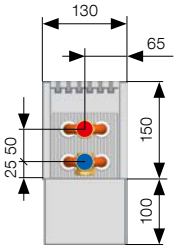
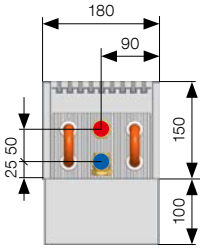
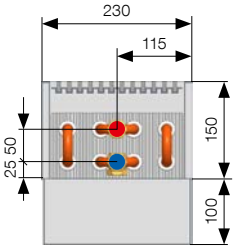
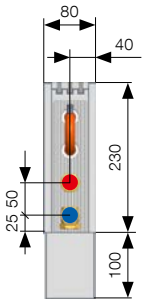
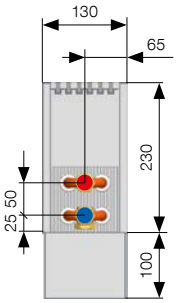
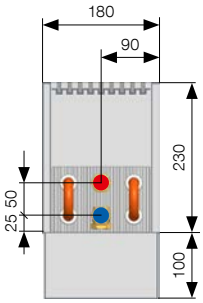
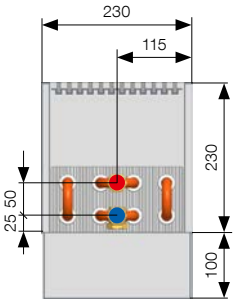
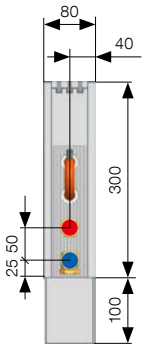
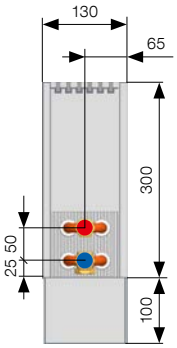
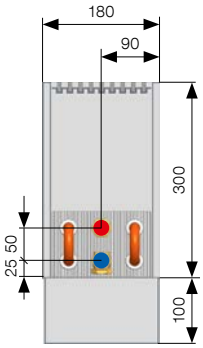
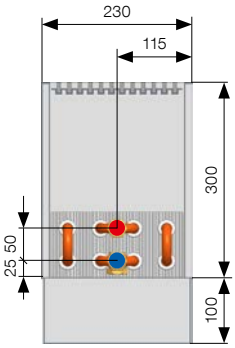
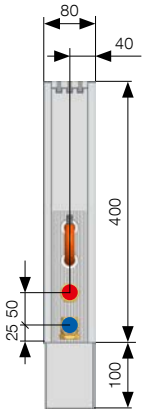
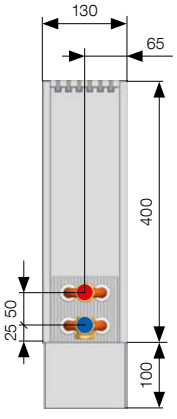
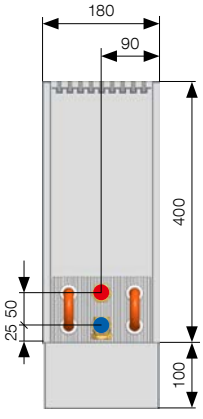
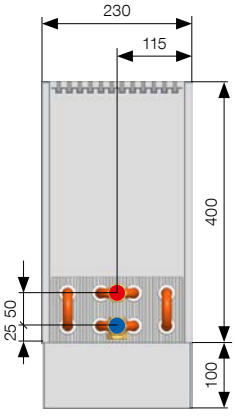
Silver elox aluminium grille



6 heights, 4 widths, 16 lengths, totalling 368 standard types

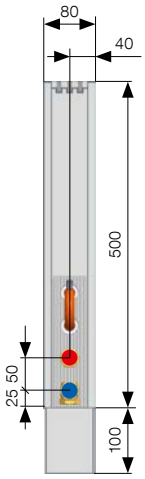
Other RAL colour chart lacquers available

SUMMARY OF TYPES
KORALINE Optimal LKO

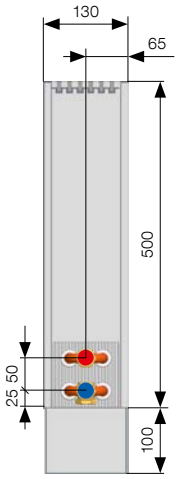
HEIGHT	WIDTH 80 mm	WIDTH 130 mm	WIDTH 180 mm	WIDTH 230 mm
90 mm				
150 mm				
230 mm				
300 mm				
400 mm				

Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm. Alterations to technical specifications reserved.

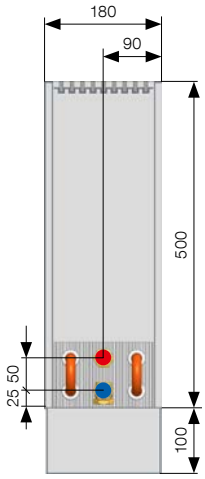
WIDTH
80 mm



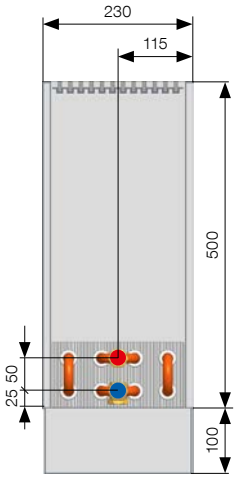
WIDTH
130 mm



WIDTH
180 mm



WIDTH
230 mm

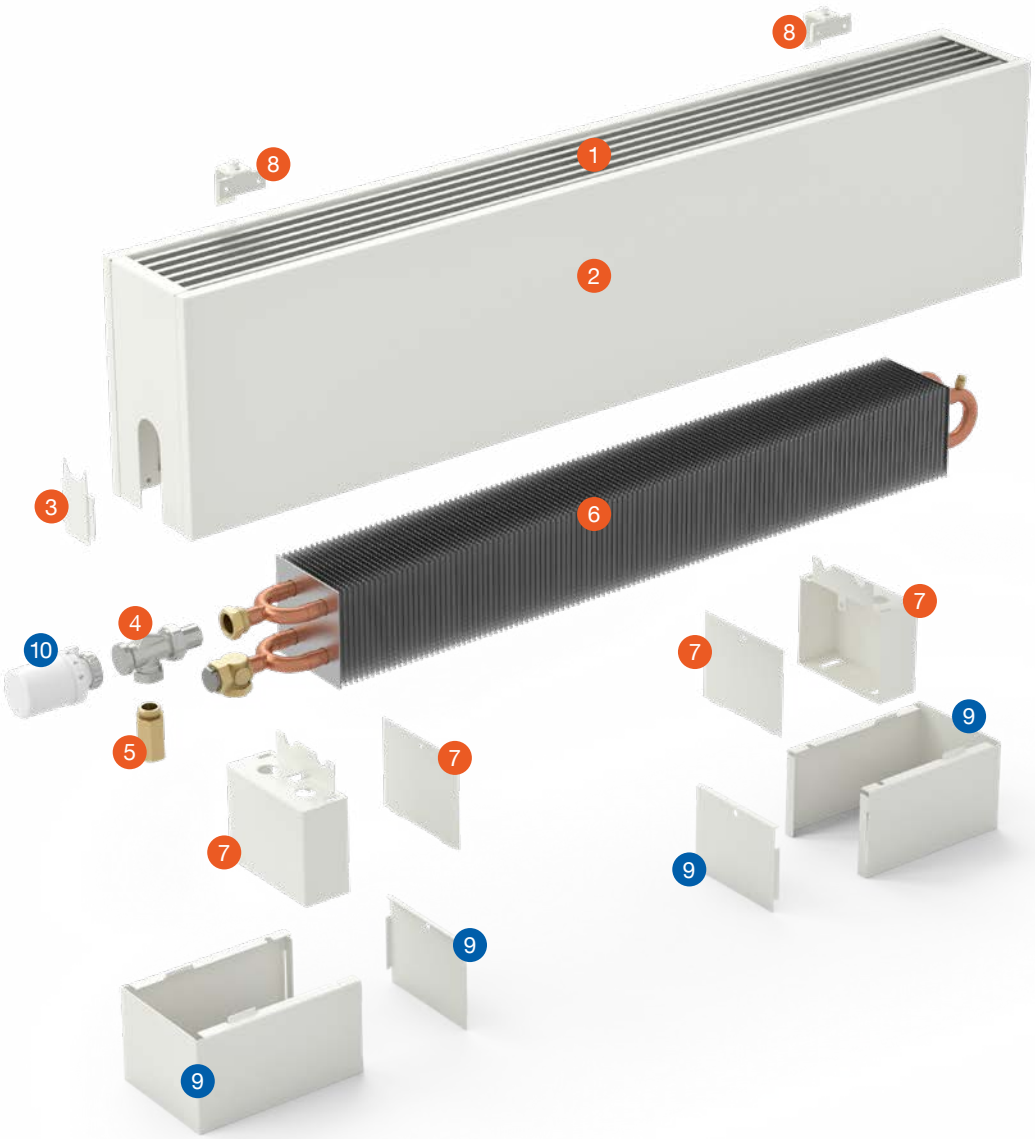


HEIGHT
500 mm

Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm. Alterations to technical specifications reserved.

Convector composition

1. silver elox aluminium grille
2. galvanized steel casing
3. magnetic side cover in casing colour
4. axial thermostatic valve
5. extension nipple for convectors from 150 mm in height
6. Al/Cu heat exchanger
7. floor-level bracket
8. wall fixing mounts for convectors from 400 mm in height
9. floor-level bracket casing
10. thermostatic head



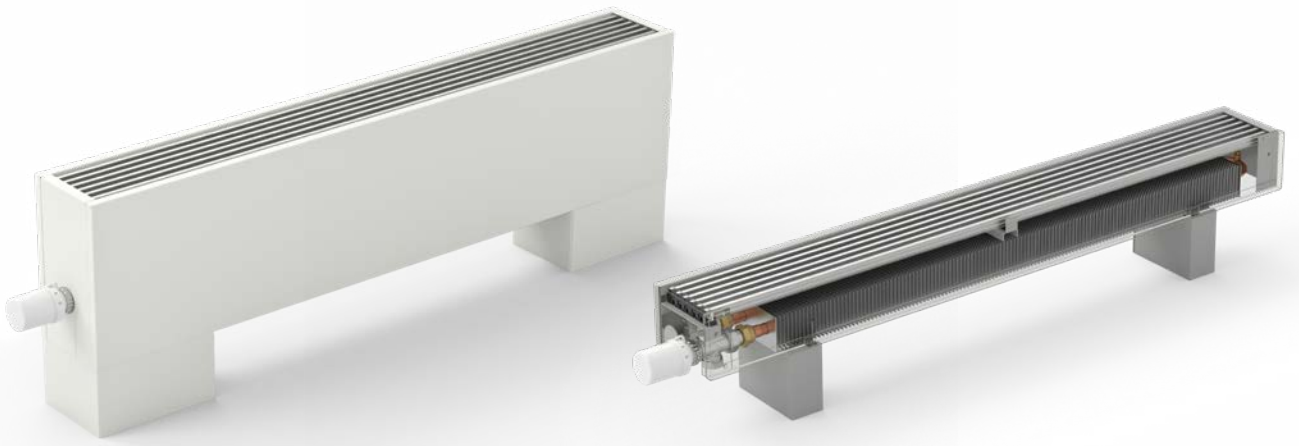
- Standard contents
- summary of optional accessories:
  for KORALINE Optimal LKO model, see p. 17,
  for KORALINE Power LKW model, see p. 23

HEAT OUTPUTS

Heat output [W] where $t_1/t_2/t_i$ = 75/65/20 °C (Δt=50), and 55/45/20 °C (Δt=30) / EN 442

KORALINE Optimal LKO												
Length	$t_1/t_2/t_i$ [°C]	Height 90			Height 150				Height 230			
		Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230
600	**75/65/20**	**203**	**322**	**454**	**149**	**264**	**471**	**579**	**208**	**295**	**555**	**683**
	55/45/20	99	158	225	71	130	228	279	100	145	270	330
700	**75/65/20**	**252**	**397**	**563**	**185**	**336**	**584**	**737**	**258**	**375**	**689**	**869**
	55/45/20	123	195	279	88	165	283	355	125	184	335	420
800	**75/65/20**	**301**	**473**	**673**	**221**	**409**	**698**	**895**	**308**	**456**	**823**	**1 056**
	55/45/20	147	233	333	105	201	338	431	149	223	400	511
900	**75/65/20**	**350**	**548**	**783**	**257**	**481**	**812**	**1 053**	**358**	**536**	**957**	**1 242**
	55/45/20	171	270	388	122	236	393	507	173	263	465	601
1 000	**75/65/20**	**399**	**624**	**892**	**293**	**553**	**925**	**1 211**	**408**	**617**	**1 091**	**1 429**
	55/45/20	195	307	442	140	272	448	583	197	302	531	691
1 100	**75/65/20**	**448**	**699**	**1 002**	**329**	**625**	**1 039**	**1 369**	**459**	**698**	**1 225**	**1 615**
	55/45/20	219	344	496	157	307	503	659	221	342	596	781
1 200	**75/65/20**	**497**	**775**	**1 112**	**365**	**697**	**1 153**	**1 527**	**509**	**778**	**1 359**	**1 802**
	55/45/20	243	381	551	174	343	558	735	246	381	661	872
1 400	**75/65/20**	**595**	**926**	**1 331**	**437**	**842**	**1 380**	**1 843**	**609**	**939**	**1 627**	**2 175**
	55/45/20	291	456	659	208	414	668	888	294	460	791	1 052
1 600	**75/65/20**	**693**	**1 077**	**1 550**	**509**	**986**	**1 607**	**2 159**	**709**	**1 100**	**1 895**	**2 548**
	55/45/20	338	530	768	243	485	778	1 040	343	539	922	1 233
1 800	**75/65/20**	**791**	**1 228**	**1 769**	**581**	**1 130**	**1 834**	**2 475**	**810**	**1 261**	**2 164**	**2 921**
	55/45/20	386	604	876	277	556	888	1 192	391	618	1 052	1 413
2 000	**75/65/20**	**889**	**1 379**	**1 988**	**653**	**1 275**	**2 062**	**2 791**	**910**	**1 422**	**2 432**	**3 294**
	55/45/20	434	678	985	311	627	998	1 344	439	697	1 182	1 594
2 200	**75/65/20**	**987**	**1 530**	**2 208**	**725**	**1 419**	**2 289**	**3 108**	**1 010**	**1 584**	**2 700**	**3 667**
	55/45/20	482	753	1 094	346	698	1 108	1 497	488	776	1 313	1 774
2 400	**75/65/20**	**1 084**	**1 681**	**2 427**	**797**	**1 564**	**2 516**	**3 424**	**1 111**	**1 745**	**2 968**	**4 040**
	55/45/20	530	827	1 202	380	769	1 218	1 649	536	855	1 443	1 954
2 600	**75/65/20**	**1 182**	**1 832**	**2 646**	**869**	**1 708**	**2 744**	**3 740**	**1 211**	**1 906**	**3 236**	**4 413**
	55/45/20	578	901	1 311	414	840	1 328	1 801	585	934	1 573	2 135
2 800	**75/65/20**	**1 280**	**1 983**	**2 865**	**941**	**1 852**	**2 971**	**4 056**	**1 311**	**2 067**	**3 504**	**4 786**
	55/45/20	626	976	1 419	448	911	1 438	1 953	633	1 013	1 704	2 315
3 000	**75/65/20**	**1 378**	**2 134**	**3 085**	**1 013**	**1 997**	**3 198**	**4 372**	**1 412**	**2 228**	**3 772**	**5 159**
	55/45/20	673	1 050	1 528	483	982	1 548	2 106	682	1 092	1 834	2 496
Temperature exponent		**1.4021**	**1.3880**	**1.3752**	**1.4503**	**1.3900**	**1.4204**	**1.4302**	**1.4250**	**1.3958**	**1.4115**	**1.4215**

Measurements in mm.



KORALINE Optimal LKO													
Length	$t_1/t_2/t_i$ [°C]	Height 300				Height 400				Height 500			
		Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230
600	**75/65/20**	**223**	**317**	**610**	**750**	**243**	**346**	**668**	**822**	**261**	**373**	**710**	**875**
	55/45/20	108	155	298	364	117	169	328	402	125	181	350	430
700	**75/65/20**	**277**	**404**	**757**	**955**	**302**	**441**	**829**	**1 047**	**324**	**474**	**881**	**1 114**
	55/45/20	133	198	369	464	145	215	407	511	155	230	435	547
800	**75/65/20**	**331**	**491**	**904**	**1 160**	**360**	**535**	**990**	**1 272**	**387**	**576**	**1 052**	**1 353**
	55/45/20	159	240	441	563	173	261	486	621	185	280	520	664
900	**75/65/20**	**385**	**578**	**1 051**	**1 365**	**419**	**630**	**1 151**	**1 497**	**450**	**678**	**1 224**	**1 592**
	55/45/20	185	282	513	663	201	307	565	731	215	329	604	782
1 000	**75/65/20**	**439**	**664**	**1 198**	**1 570**	**477**	**725**	**1 313**	**1 721**	**513**	**780**	**1 395**	**1 831**
	55/45/20	211	325	585	763	229	353	644	841	245	378	689	899
1 100	**75/65/20**	**493**	**751**	**1 346**	**1 775**	**536**	**819**	**1 474**	**1 946**	**576**	**882**	**1 567**	**2 070**
	55/45/20	237	367	657	862	257	399	724	950	275	428	773	1 016
1 200	**75/65/20**	**547**	**838**	**1 493**	**1 980**	**595**	**914**	**1 635**	**2 171**	**639**	**984**	**1 738**	**2 309**
	55/45/20	263	410	729	962	286	445	803	1 060	306	477	858	1 134
1 400	**75/65/20**	**654**	**1 011**	**1 787**	**2 390**	**712**	**1 103**	**1 958**	**2 620**	**765**	**1 187**	**2 081**	**2 787**
	55/45/20	315	494	873	1 161	342	537	961	1 279	366	576	1 027	1 369
1 600	**75/65/20**	**762**	**1 185**	**2 082**	**2 800**	**829**	**1 292**	**2 280**	**3 069**	**891**	**1 391**	**2 424**	**3 265**
	55/45/20	367	579	1 016	1 360	398	629	1 120	1 499	426	675	1 197	1 603
1 800	**75/65/20**	**870**	**1 358**	**2 376**	**3 210**	**947**	**1 481**	**2 603**	**3 519**	**1 017**	**1 594**	**2 766**	**3 743**
	55/45/20	419	664	1 160	1 559	454	721	1 278	1 718	486	774	1 366	1 838
2 000	**75/65/20**	**978**	**1 532**	**2 671**	**3 620**	**1 064**	**1 670**	**2 925**	**3 968**	**1 143**	**1 798**	**3 109**	**4 221**
	55/45/20	471	749	1 304	1 758	511	814	1 436	1 938	547	873	1 535	2 073
2 200	**75/65/20**	**1 086**	**1 705**	**2 965**	**4 030**	**1 181**	**1 860**	**3 248**	**4 418**	**1 269**	**2 002**	**3 452**	**4 699**
	55/45/20	523	834	1 448	1 957	567	906	1 595	2 157	607	971	1 704	2 308
2 400	**75/65/20**	**1 194**	**1 878**	**3 260**	**4 440**	**1 299**	**2 049**	**3 571**	**4 867**	**1 395**	**2 205**	**3 795**	**5 177**
	55/45/20	575	918	1 591	2 156	623	998	1 753	2 377	667	1 070	1 874	2 542
2 600	**75/65/20**	**1 301**	**2 052**	**3 554**	**4 850**	**1 416**	**2 238**	**3 893**	**5 317**	**1 521**	**2 409**	**4 138**	**5 655**
	55/45/20	627	1 003	1 735	2 355	680	1 090	1 911	2 596	728	1 169	2 043	2 777
2 800	**75/65/20**	**1 409**	**2 225**	**3 849**	**5 260**	**1 533**	**2 427**	**4 216**	**5 766**	**1 647**	**2 613**	**4 481**	**6 133**
	55/45/20	679	1 088	1 879	2 554	736	1 182	2 070	2 816	788	1 268	2 212	3 012
3 000	**75/65/20**	**1 517**	**2 399**	**4 143**	**5 670**	**1 651**	**2 616**	**4 538**	**6 215**	**1 773**	**2 816**	**4 823**	**6 612**
	55/45/20	731	1 173	2 023	2 753	792	1 274	2 228	3 035	848	1 367	2 381	3 247
Temperature exponent		**1.4298**	**1.4009**	**1.4038**	**1.4139**	**1.4367**	**1.4081**	**1.3927**	**1.4031**	**1.4436**	**1.4153**	**1.3816**	**1.3923**

Measurements in mm.

ORDER CODE

KORALINE	Natural convection	Type	Length [cm]		Height [cm]		Width [cm]		Convector connection	Heat exchanger colour	Materials used	Grille type	Grille colour		Casing colour
L	K	O Optimal	-	···	/	··	/	··	- V counter-flow	1 elox silver	S steel	A aluminium	1 elox silver	-	10 RAL 9016 ** see colour chart p. 109 99 other RAL colour

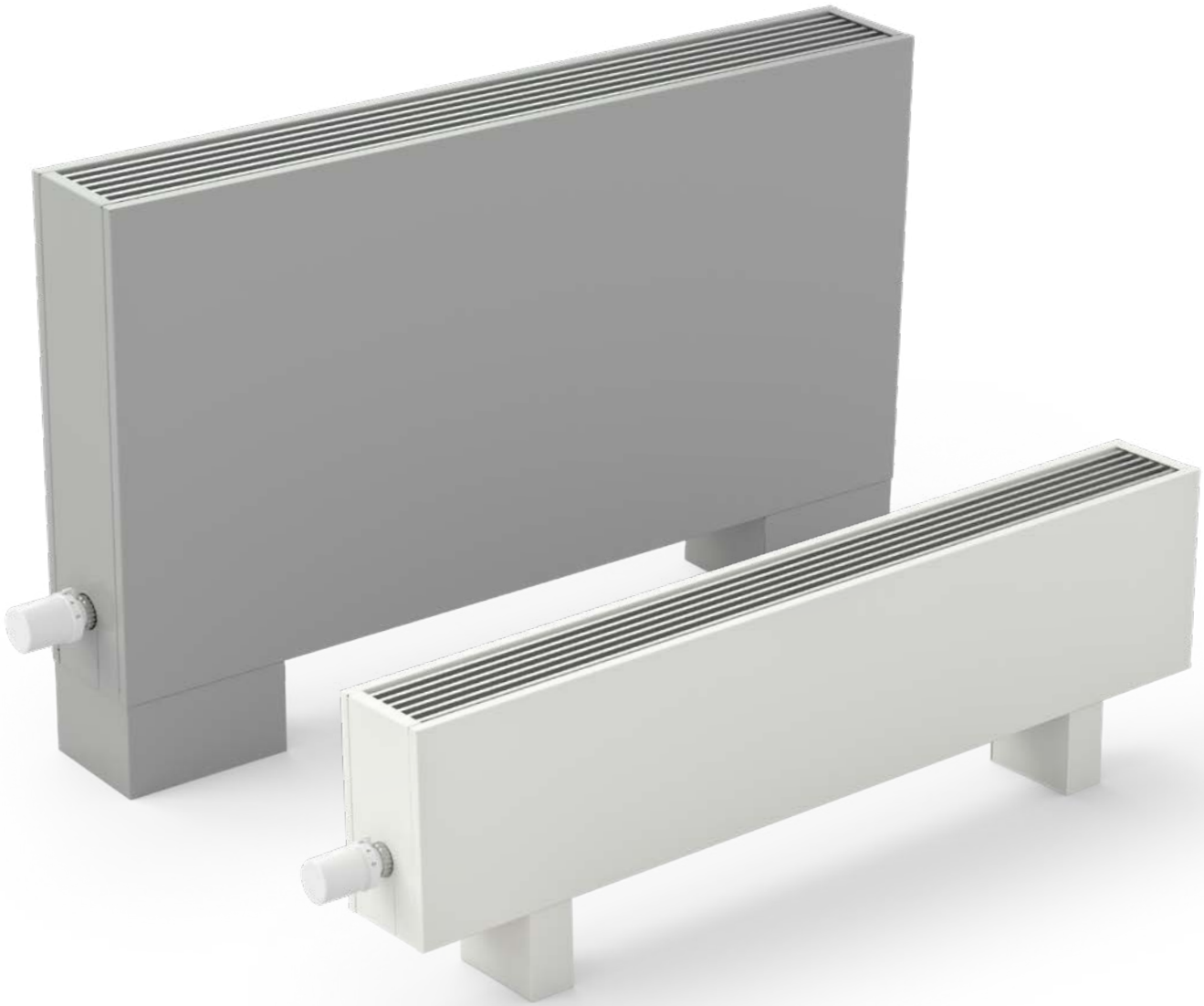
Example order code: LKO-140/23/18-V1SA1-10

KORALINE Optimal free-standing convector, Length 140 cm, Height 23 cm, Width 18 cm, Steel casing white RAL 9016, silver elox aluminium grille.

For calculations for other temperature gradients, see p. 81 or visit www.licon.cz

Further information

Assembly and mounting p. 51, Accessories p. 65, Technical data p. 71, Colour chart p. 109



KORALINE Power LKW

Free-standing convectors with natural convection, design grille and high-performance heat exchanger

KORALINE Power LKW

Specifications

Height	230, 300, 400, 500, 600, 700, 800 mm
Width	80, 130, 180, 230 mm
Length	600, 700, 800, 900, 1 000, 1 100, 1 200, 1 400, 1 600, 1 800, 2 000, 2 200, 2 400, 2 600, 2 800, 3 000 mm
Output	from 220 to 7 400 W
Max. operating pressure	1.2 MPa
Max. operating temperature	110 °C
Max. surface temperature	40 °C
Connecting thread	inner G 1/2"
Connection method	lower (recommended), side

The **KORALINE Power LKW** model range is our most extensive product range. This model features a high-performance heat exchanger with double the area of uniquely shaped fins. The design and dimensions of the heat exchanger ensure efficient heat transfer. The entire model series achieves higher heat outputs while maintaining all the design features of KORALINE convectors. The KORALINE Power LKW range is manufactured using galvanized sheet steel and is fitted with a high quality silver elox grille. Due to the maximized output, more compact dimensions and perfect design, these convectors have been designed to heat both domestic homes and non-residential premises, including large office buildings.

Standard contents

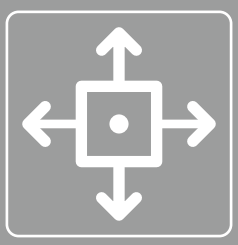
- silver elox aluminium grille
- galvanized steel casing RAL 9016 white lacquer
- high-performance Al/Cu heat exchanger for universal connections, low water content, bleed valve, double the area of uniquely shaped fins for maximum heat output
- magnetic side cover in casing colour
- axial thermostatic valve, M 30 × 1.5 thread (see p. 66)
- extension nipple for convetors from 150 mm in height (see p. 66)
- floor level brackets
- wall fixing mounts for convectors from 400 mm in height (see p. 53)
- instructions and durable packaging

Optional accessories

- further RAL lacquers for casings available
- floor-level bracket casings (see p. 52)
- wall brackets (see p. 53)
- sub-floor brackets (see p. 53)
- elbow or straight lockshield (see p. 68)
- elbow or straight thermostatic valve (see p. 68)
- TEP 230 or TEP 24 thermoelectric actuator (see p. 66)
- SIEMENS RAA21 or RDE 100.1 room thermostat (see p. 68)
- QAA32 room temperature sensor (see p. 94)
- thermostatic head (see p. 67)
- thermostatic head with incorporated control and immersion remote sensor (see p. 67)

Silver elox aluminium grille

High-performance heat exchanger with double area of fins



7 heights, 4 widths, 16 lengths, totalling 388 standard types

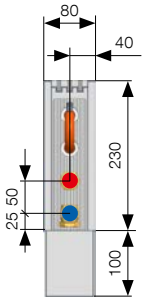
Other RAL colour chart lacquers available

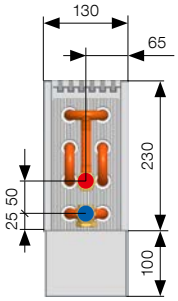
High heating performance

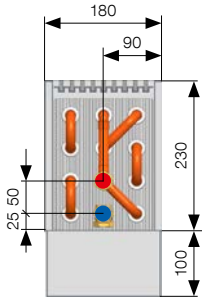
SUMMARY OF TYPES
KORALINE Power LKW

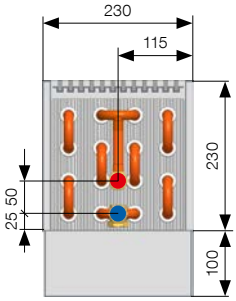
WIDTH **80 mm** | WIDTH **130 mm** | WIDTH **180 mm** | WIDTH **230 mm**

HEIGHT **230 mm**

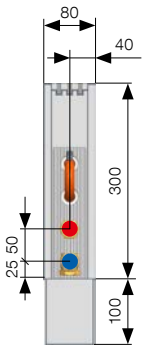


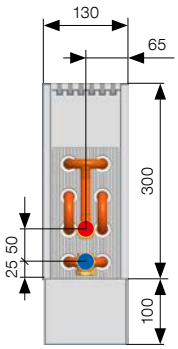


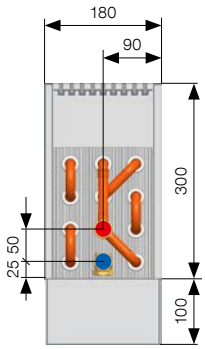


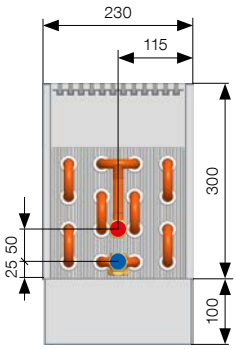


HEIGHT **300 mm**

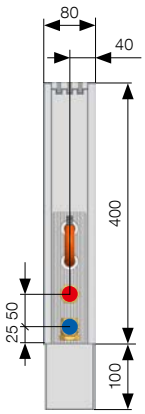


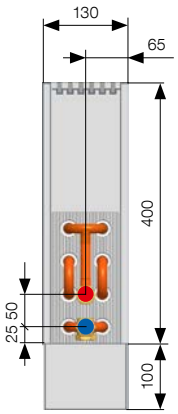


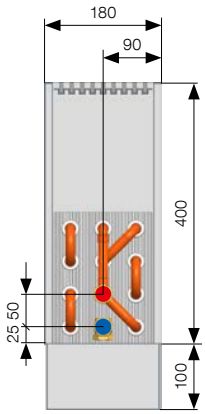


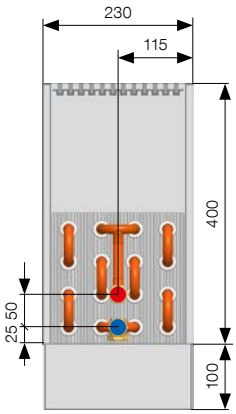


HEIGHT **400 mm**

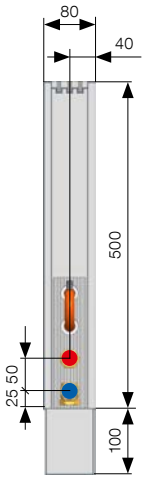


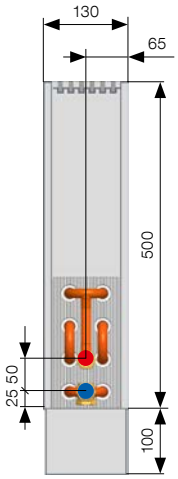


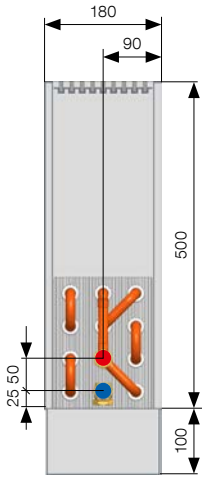


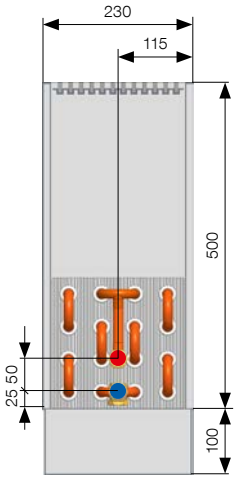


HEIGHT **500 mm**









Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm. Alterations to technical specifications reserved.

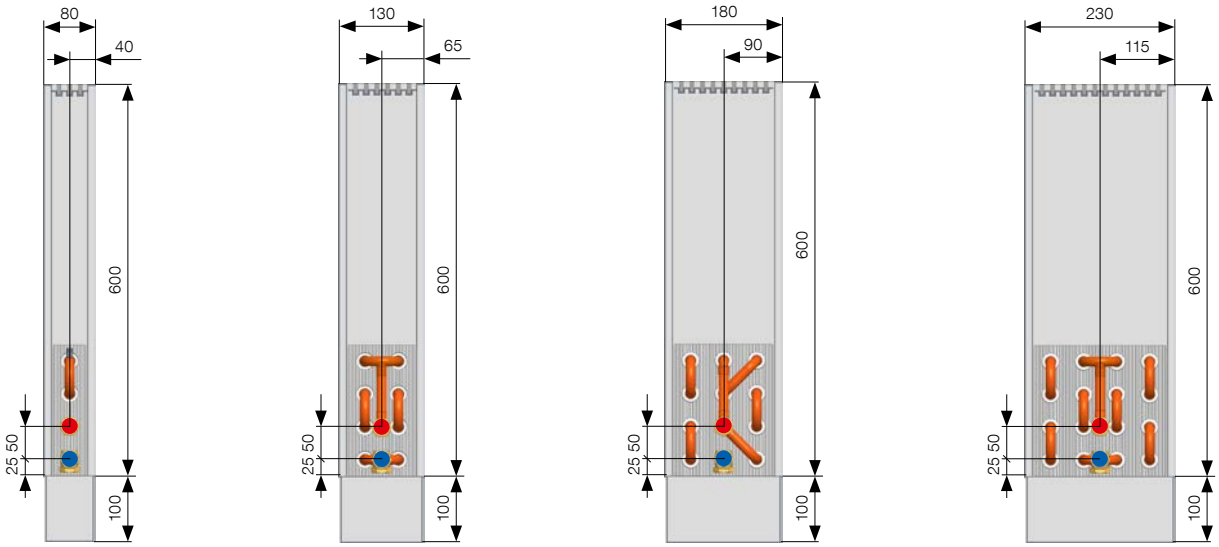
WIDTH
80 mm

WIDTH
130 mm

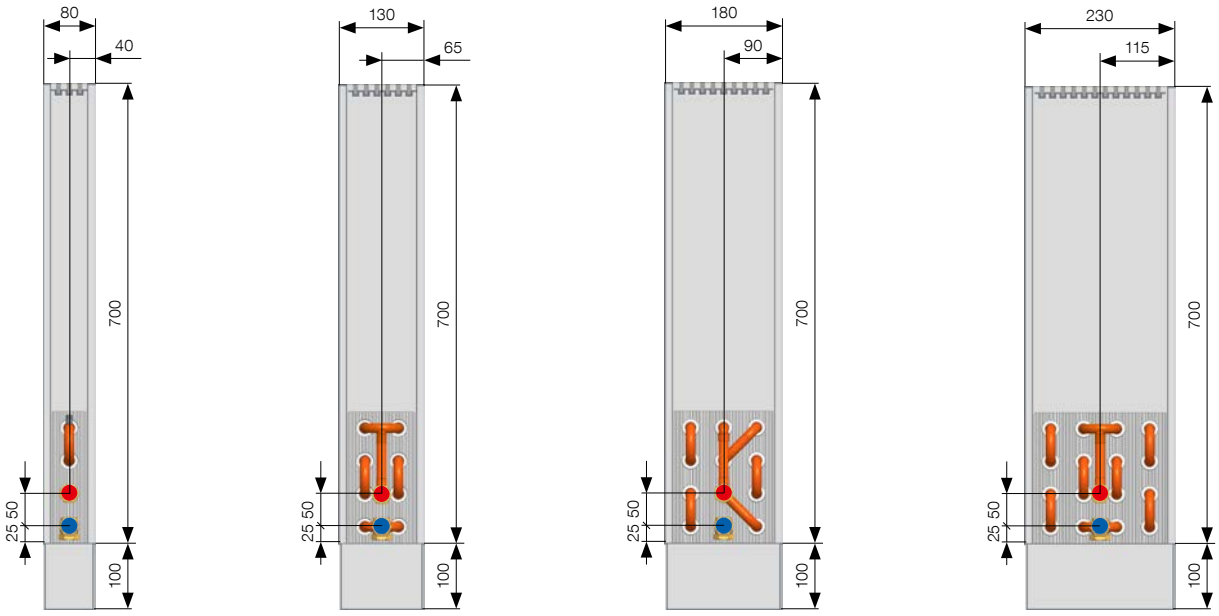
WIDTH
180 mm

WIDTH
230 mm

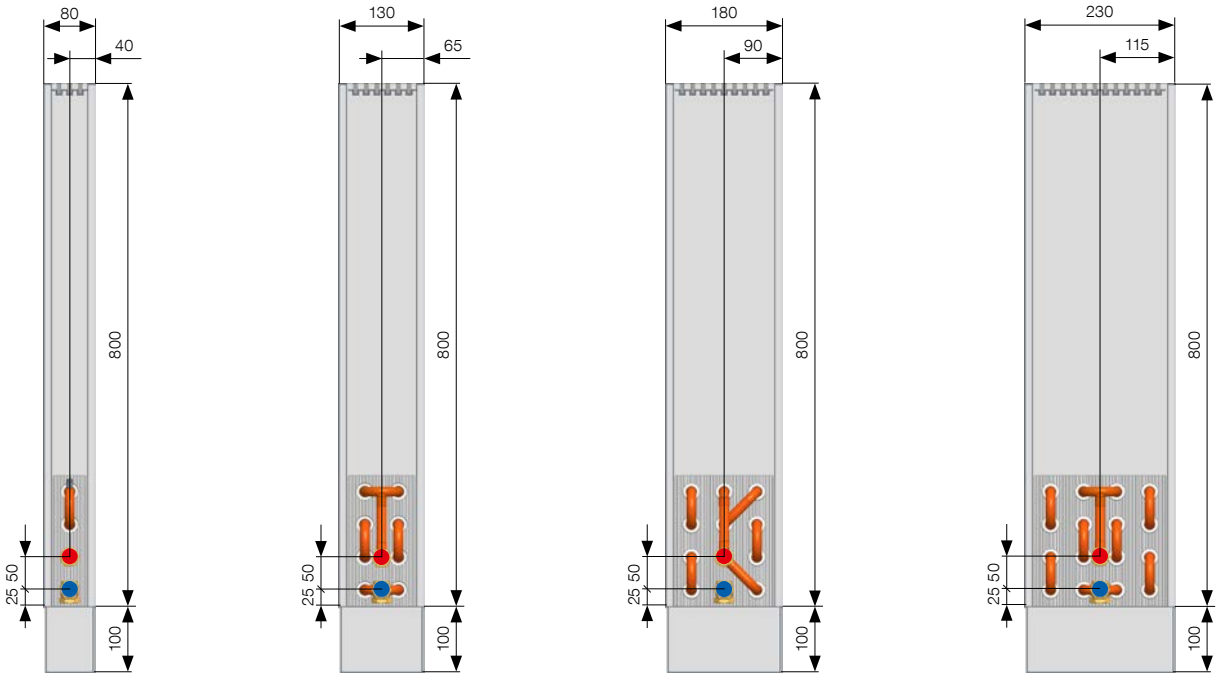
HEIGHT
600 mm



HEIGHT
700 mm



HEIGHT
800 mm



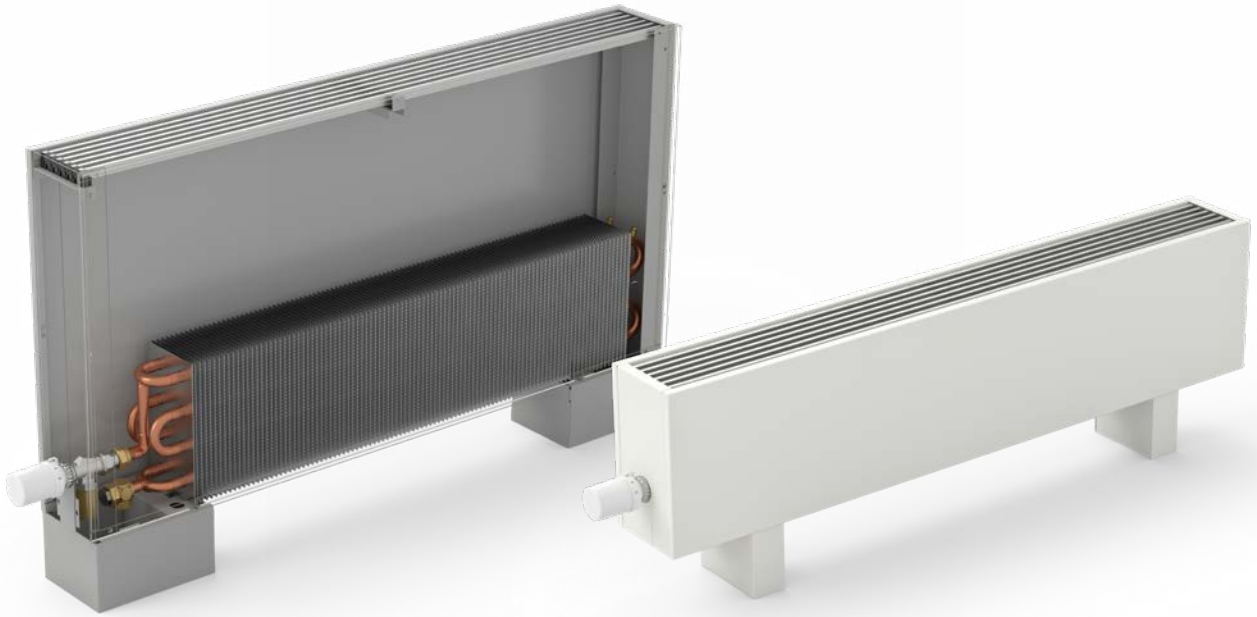
Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm. Alterations to technical specifications reserved.

HEAT OUTPUTS

Heat output [W] where $t_1/t_2/t_i$ = 75/65/20 °C (Δt=50), and 55/45/20 °C (Δt=30) / EN 442

KORALINE Power LKW													
Length	$t_1/t_2/t_i$ [°C]	Height 230				Height 300				Height 400			
		Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230
600	**75/65/20**	**220**	**405**	**588**	**802**	**236**	**437**	**633**	**865**	**254**	**470**	**680**	**931**
	55/45/20	112	199	286	386	119	216	308	418	129	233	333	452
700	**75/65/20**	**274**	**516**	**757**	**1 021**	**292**	**557**	**815**	**1 101**	**316**	**599**	**876**	**1 186**
	55/45/20	139	254	368	492	148	275	397	532	160	297	429	576
800	**75/65/20**	**327**	**627**	**926**	**1 240**	**349**	**676**	**997**	**1 338**	**377**	**728**	**1 072**	**1 440**
	55/45/20	166	308	450	597	177	334	486	646	191	361	525	699
900	**75/65/20**	**380**	**738**	**1 096**	**1 459**	**406**	**795**	**1 179**	**1 574**	**438**	**856**	**1 268**	**1 695**
	55/45/20	193	363	533	703	206	393	575	761	222	424	621	823
1 000	**75/65/20**	**433**	**848**	**1 265**	**1 678**	**463**	**915**	**1 362**	**1 810**	**500**	**985**	**1 464**	**1 949**
	55/45/20	220	417	615	808	235	451	664	875	253	488	717	946
1 100	**75/65/20**	**487**	**959**	**1 434**	**1 897**	**520**	**1 034**	**1 544**	**2 046**	**561**	**1 113**	**1 660**	**2 204**
	55/45/20	247	472	698	914	264	510	753	989	284	552	813	1 070
1 200	**75/65/20**	**540**	**1 070**	**1 604**	**2 116**	**577**	**1 154**	**1 726**	**2 283**	**623**	**1 242**	**1 856**	**2 458**
	55/45/20	274	526	780	1 019	292	569	842	1 103	315	615	909	1 193
1 400	**75/65/20**	**647**	**1 292**	**1 942**	**2 554**	**691**	**1 393**	**2 091**	**2 755**	**745**	**1 499**	**2 247**	**2 967**
	55/45/20	328	635	945	1 230	350	687	1 020	1 332	377	743	1 100	1 440
1 600	**75/65/20**	**753**	**1 513**	**2 281**	**2 992**	**804**	**1 631**	**2 455**	**3 228**	**868**	**1 756**	**2 639**	**3 476**
	55/45/20	382	744	1 109	1 442	408	805	1 197	1 560	439	870	1 292	1 687
1 800	**75/65/20**	**860**	**1 735**	**2 620**	**3 430**	**918**	**1 870**	**2 820**	**3 701**	**991**	**2 013**	**3 031**	**3 985**
	55/45/20	437	853	1 274	1 653	465	923	1 375	1 788	501	998	1 484	1 934
2 000	**75/65/20**	**966**	**1 956**	**2 959**	**3 868**	**1 032**	**2 109**	**3 185**	**4 173**	**1 114**	**2 270**	**3 423**	**4 494**
	55/45/20	491	962	1 439	1 864	523	1 041	1 553	2 017	563	1 125	1 676	2 181
2 200	**75/65/20**	**1 073**	**2 178**	**3 297**	**4 306**	**1 146**	**2 348**	**3 549**	**4 646**	**1 237**	**2 527**	**3 815**	**5 003**
	55/45/20	545	1 071	1 603	2 075	581	1 159	1 731	2 245	625	1 253	1 868	2 428
2 400	**75/65/20**	**1 179**	**2 399**	**3 636**	**4 744**	**1 259**	**2 587**	**3 914**	**5 119**	**1 360**	**2 784**	**4 207**	**5 512**
	55/45/20	599	1 180	1 768	2 286	638	1 277	1 909	2 474	687	1 380	2 060	2 676
2 600	**75/65/20**	**1 286**	**2 621**	**3 975**	**5 182**	**1 373**	**2 826**	**4 278**	**5 591**	**1 482**	**3 041**	**4 599**	**6 021**
	55/45/20	653	1 289	1 933	2 497	696	1 394	2 086	2 702	749	1 507	2 252	2 923
2 800	**75/65/20**	**1 392**	**2 842**	**4 313**	**5 621**	**1 487**	**3 065**	**4 643**	**6 064**	**1 605**	**3 298**	**4 990**	**6 530**
	55/45/20	707	1 398	2 098	2 708	754	1 512	2 264	2 930	811	1 635	2 444	3 170
3 000	**75/65/20**	**1 499**	**3 064**	**4 652**	**6 059**	**1 601**	**3 303**	**5 007**	**6 536**	**1 728**	**3 556**	**5 382**	**7 039**
	55/45/20	761	1 507	2 262	2 919	811	1 630	2 442	3 159	874	1 762	2 635	3 417
Temperature exponent		**1.3261**	**1.3885**	**1.4113**	**1.4295**	**1.3299**	**1.3826**	**1.4058**	**1.4236**	**1.3353**	**1.3741**	**1.3979**	**1.4151**

Measurements in mm.



KORALINE Power LKW

Length	$t_1/t_2/t_i$ [°C]	Height 500				Height 600				Height 700				Height 800			
		Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230
600	**75/65/20**	**271**	**494**	**714**	**979**	**287**	**512**	**739**	**1 014**	**302**	**524**	**757**	**1 039**	**316**	**533**	**770**	**1 056**
	55/45/20	137	246	351	477	144	256	365	496	151	263	375	511	158	269	383	522
700	**75/65/20**	**337**	**630**	**920**	**1 247**	**356**	**652**	**952**	**1 291**	**375**	**667**	**976**	**1 323**	**393**	**679**	**992**	**1 345**
	55/45/20	170	313	452	608	179	326	470	632	188	335	483	650	196	342	494	664
800	**75/65/20**	**402**	**765**	**1 126**	**1 514**	**425**	**791**	**1 165**	**1 568**	**447**	**811**	**1 194**	**1 606**	**469**	**824**	**1 214**	**1 633**
	55/45/20	203	381	553	738	214	396	575	768	224	407	592	790	234	416	604	807
900	**75/65/20**	**467**	**900**	**1 331**	**1 782**	**495**	**931**	**1 378**	**1 845**	**520**	**954**	**1 412**	**1 890**	**545**	**970**	**1 436**	**1 922**
	55/45/20	236	448	655	869	249	466	680	903	261	479	700	929	273	489	715	949
1 000	**75/65/20**	**533**	**1 035**	**1 537**	**2 049**	**564**	**1 071**	**1 591**	**2 122**	**593**	**1 097**	**1 630**	**2 174**	**622**	**1 115**	**1 658**	**2 210**
	55/45/20	269	515	756	999	283	535	785	1 039	297	551	808	1 069	311	562	825	1 092
1 100	**75/65/20**	**598**	**1 170**	**1 743**	**2 317**	**633**	**1 211**	**1 804**	**2 399**	**666**	**1 240**	**1 848**	**2 458**	**698**	**1 261**	**1 880**	**2 499**
	55/45/20	302	582	857	1 129	318	605	891	1 175	334	623	916	1 209	349	636	936	1 234
1 200	**75/65/20**	**664**	**1 305**	**1 949**	**2 585**	**702**	**1 351**	**2 017**	**2 676**	**739**	**1 384**	**2 067**	**2 742**	**774**	**1 407**	**2 102**	**2 787**
	55/45/20	335	650	958	1 260	353	675	996	1 310	370	695	1 024	1 348	387	709	1 046	1 377
1 400	**75/65/20**	**795**	**1 575**	**2 360**	**3 120**	**841**	**1 630**	**2 443**	**3 230**	**885**	**1 670**	**2 503**	**3 309**	**927**	**1 698**	**2 546**	**3 364**
	55/45/20	401	784	1 160	1 521	423	815	1 206	1 581	444	839	1 241	1 627	464	856	1 267	1 662
1 600	**75/65/20**	**926**	**1 845**	**2 772**	**3 655**	**979**	**1 910**	**2 869**	**3 784**	**1 030**	**1 957**	**2 940**	**3 877**	**1 080**	**1 989**	**2 990**	**3 942**
	55/45/20	467	919	1 363	1 782	492	955	1 416	1 853	517	982	1 457	1 906	540	1 003	1 488	1 947
1 800	**75/65/20**	**1 057**	**2 115**	**3 184**	**4 190**	**1 118**	**2 190**	**3 295**	**4 338**	**1 176**	**2 243**	**3 376**	**4 444**	**1 233**	**2 280**	**3 434**	**4 519**
	55/45/20	533	1 053	1 565	2 042	562	1 095	1 626	2 124	590	1 126	1 673	2 186	616	1 150	1 709	2 232
2 000	**75/65/20**	**1 188**	**2 386**	**3 595**	**4 725**	**1 256**	**2 469**	**3 721**	**4 892**	**1 322**	**2 530**	**3 813**	**5 012**	**1 385**	**2 572**	**3 878**	**5 096**
	55/45/20	599	1 187	1 767	2 303	632	1 234	1 837	2 395	663	1 270	1 890	2 465	693	1 297	1 930	2 517
2 200	**75/65/20**	**1 319**	**2 656**	**4 007**	**5 260**												
	55/45/20	665	1 322	1 970	2 564												
2 400	**75/65/20**	**1 450**	**2 926**	**4 418**	**5 795**												
	55/45/20	731	1 456	2 172	2 825												
2 600	**75/65/20**	**1 581**	**3 196**	**4 830**	**6 330**												
	55/45/20	797	1 591	2 374	3 086												
2 800	**75/65/20**	**1 711**	**3 466**	**5 241**	**6 865**												
	55/45/20	863	1 725	2 577	3 347												
3 000	**75/65/20**	**1 842**	**3 736**	**5 653**	**7 400**												
	55/45/20	929	1 860	2 779	3 608												
Temperature exponent		**1.3407**	**1.3657**	**1.3900**	**1.4065**	**1.3462**	**1.3573**	**1.3821**	**1.3980**	**1.3516**	**1.3488**	**1.3742**	**1.3895**	**1.3570**	**1.3404**	**1.3662**	**1.3810**

Measurements in mm.

For convector composition see page 19.

ORDER CODE

KORALINE	Natural convection	Type	Length [cm]	Height [cm]	Width [cm]	Convector connection	Heat exchanger colour	Material used	Grille type	Grille colour	Casing colour
L	K	W Power	- ···	/ ··	/ ··	- V counter-flow	1 without colour	S steel	A aluminium	1 elox silver	- 10 RAL 9016 ** see colour chart p. 109 99 other RAL colour

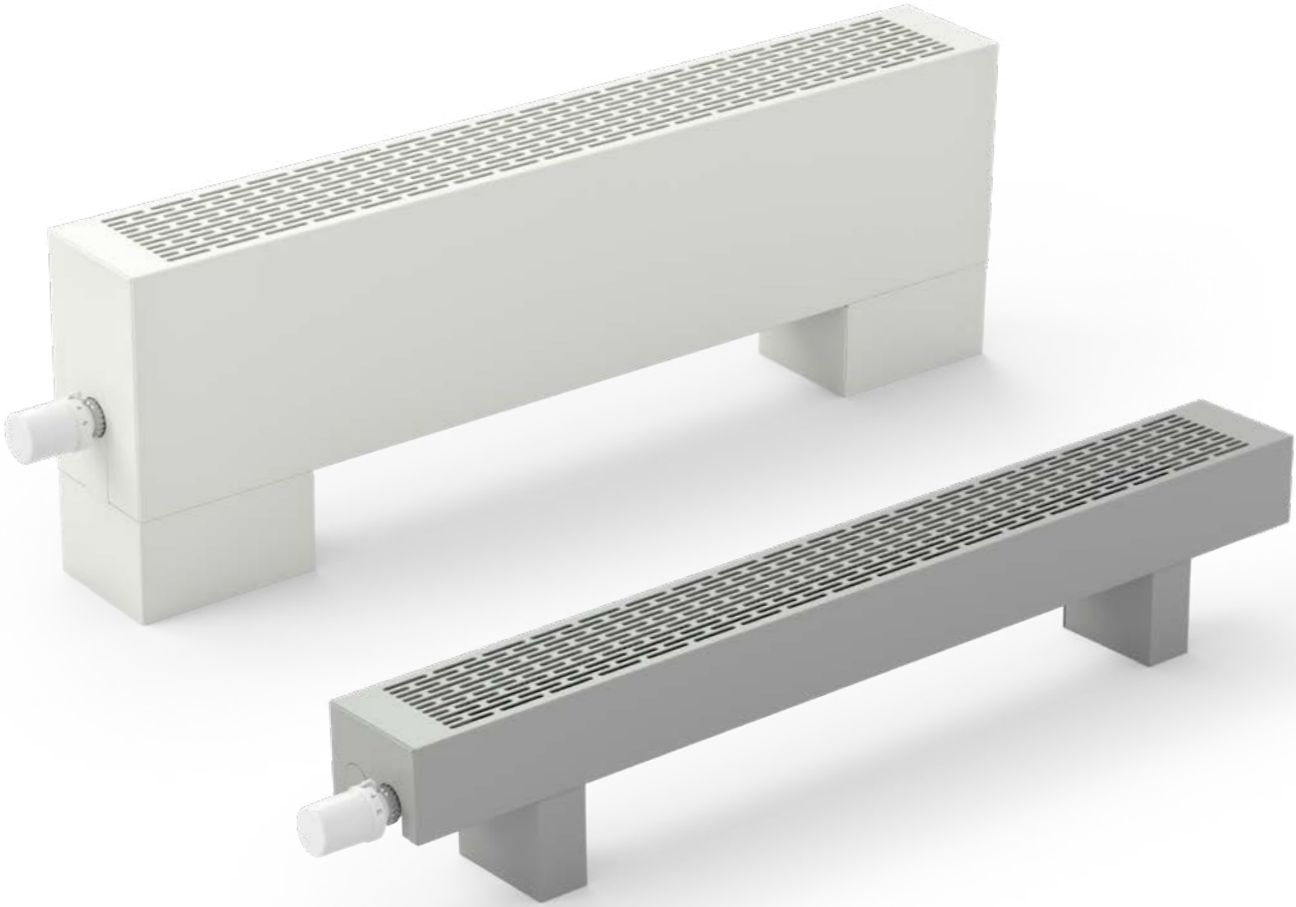
Example order code: LKW-140/23/18-V1SA1-10

KORALINE Power LKW free-standing convector, Length 140 cm, Height 23 cm, Width 18 cm, Steel casing white RAL 9016, silver elox aluminium grille.

For calculations for other temperature gradients, see p. 81 or visit www.licon.cz

Further information

Assembly and mounting p. 51, Accessories p. 65, Technical data p. 71, Colour chart p. 109



KORALINE Basic LKB

Free-standing convectors with natural convection and perforated safety grille

KORALINE Basic LKB

Specifications

Height	90, 150, 230, 300, 400, 500 mm
Width	130, 180, 230 mm
Length	600, 700, 800, 900, 1 000, 1 100, 1 200, 1 400, 1 600, 1 800, 2 000, 2 200, 2 400, 2 600, 2 800, 3 000 mm
Output	from 203 to 6 612 W
Max. operating pressure	1.2 MPa
Max. operating temperature	110 °C
Max. surface temperature	40 °C
Connecting thread	inner G 1/2"
Connection method	lower (recommended), side

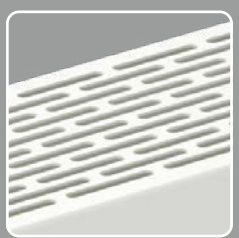
The **KORALINE Basic LKB** model series is the standard version of our low surface temperature floor convectors. In this model series, the safety exhaust grille is perforated directly into the galvanized steel casing of the convector, making it an integral part of the convector. Optimal outputs and a favourable price make KORALINE Basic the ideal model series for heating private homes, apartment blocks and office buildings.

Standard contents

- galvanized steel casing incorporating perforated safety grille, lacquered white RAL 9016
- Al/Cu low water volume heat exchanger for universal connections, bleed valve, uniquely shaped fins
- magnetic side cover in casing colour
- axial thermostatic valve, M 30 × 1.5 thread (see p. 66)
- extension nipple for convectors from 150 mm in height (see p. 66)
- floor-level brackets
- wall fixing mounts for convectors from 400 mm in height (see p. 53)
- assembly instructions and durable packaging

Optional accessories

- further RAL lacquers for casings with perforated grilles available
- floor-level bracket casings (see p. 52)
- wall brackets (see p. 53)
- sub-floor brackets (see p. 53)
- elbow or straight lockshield (see p. 68)
- elbow or straight thermostatic valve (see p. 68)
- TEP 230 or TEP 24 thermoelectric actuator (see p. 66)
- SIEMENS RAA21 or RDE 100.1 room thermostat (see p. 68)
- QAA32 room temperature sensor (see p. 94)
- thermostatic head (see p. 67)
- thermostatic head with incorporated control and immersion remote sensor (see p. 67)

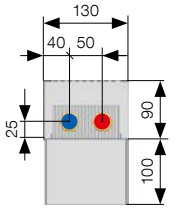
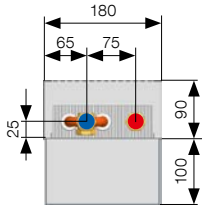
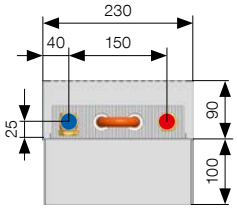
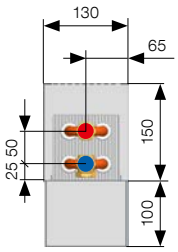
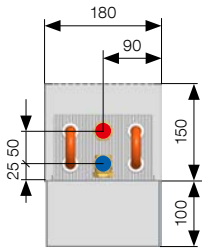
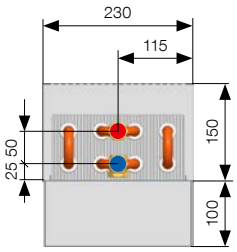
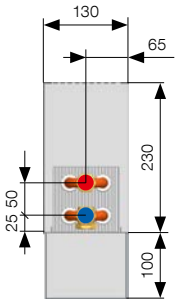
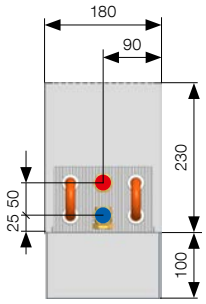
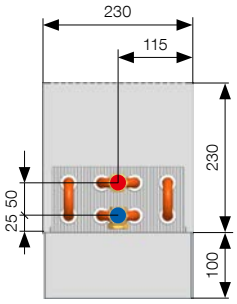
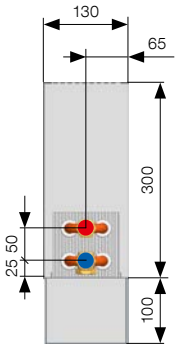
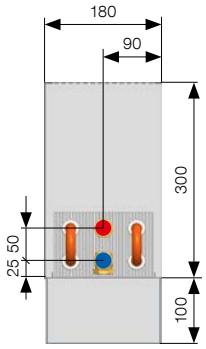
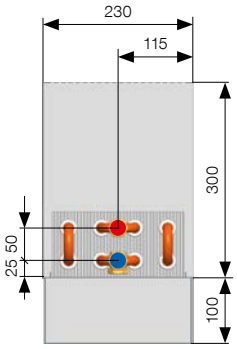
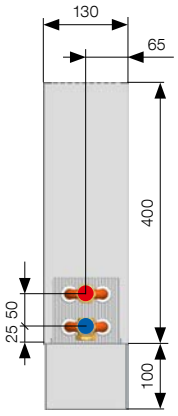
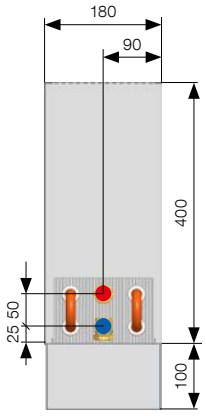
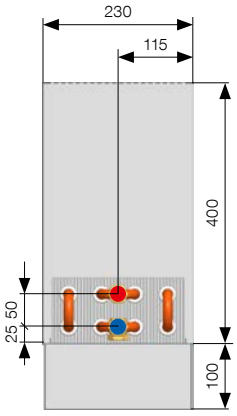


Casing incorporating perforated safety grille

Optimal price / performance ratio

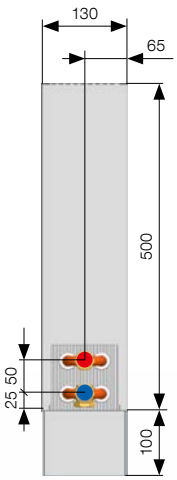
Other RAL colour chart lacquers available

SUMMARY OF TYPES
KORALINE Basic LKB

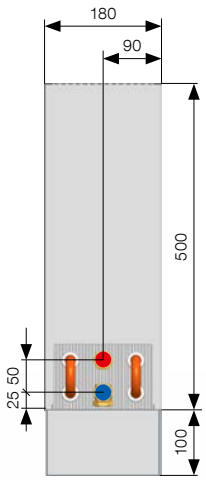
	WIDTH 130 mm	WIDTH 180 mm	WIDTH 230 mm
HEIGHT 90 mm			
HEIGHT 150 mm			
HEIGHT 230 mm			
HEIGHT 300 mm			
HEIGHT 400 mm			

Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm. Alterations to technical specifications reserved.

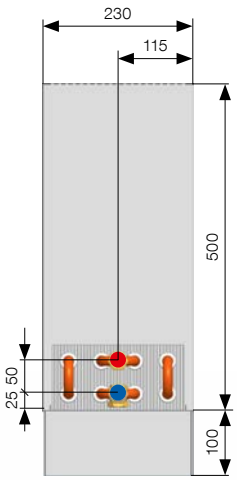
WIDTH
130 mm



WIDTH
180 mm



WIDTH
230 mm

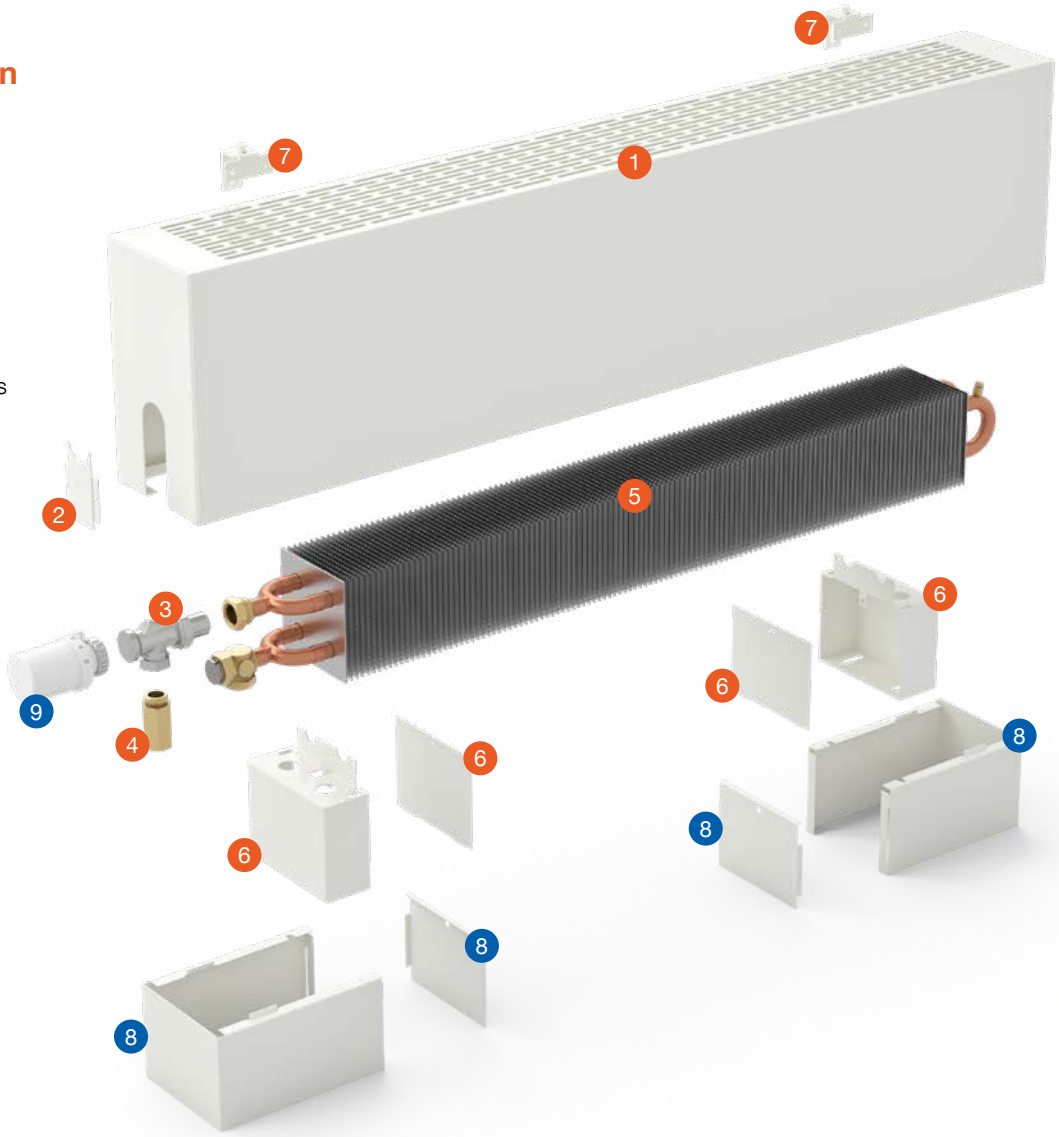


HEIGHT
500 mm

Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm. Alterations to technical specifications reserved.

Convector composition

1. galvanized steel casing with perforated safety grille
2. magnetic side cover in casing colour
3. axial thermostatic valve
4. extension nipple for convectors from 150 mm in height
5. Al/Cu heat exchanger
6. floor-level brackets
7. safety wall mounts for convectors from 400 mm in height
8. floor-level bracket casing
9. thermostatic head



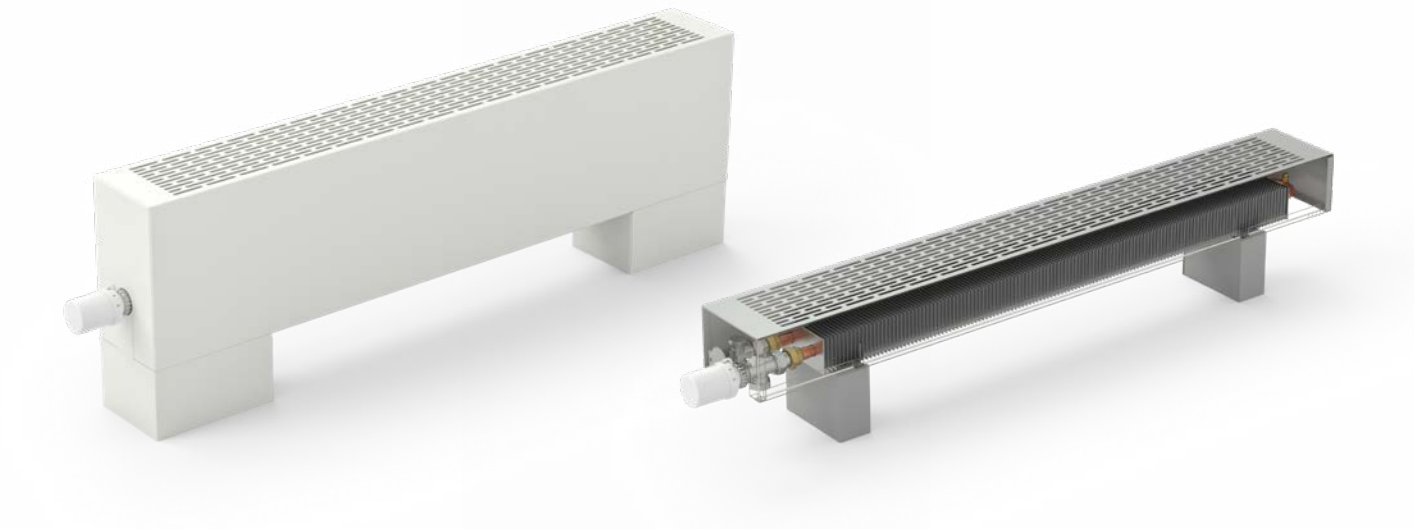
● Standard contents
● Optional accessories:
for KORALINE Basic LKB model, see p. 29,
for KORALINE Combi LKC model, see p. 35

HEAT OUTPUTS

Heat output [W] where $t_1/t_2/t_i$ = 75/65/20 °C (Δt=50), and 55/45/20 °C (Δt=30) / EN 442

KORALINE Basic LKB										
Length	$t_1/t_2/t_i$ [°C]	Height 90			Height 150			Height 230		
		Width 130	Width 180	Width 230	Width 130	Width 180	Width 230	Width 130	Width 180	Width 230
600	**75/65/20**	**203**	**322**	**454**	**264**	**471**	**579**	**295**	**555**	**683**
	55/45/20	99	158	225	130	228	279	145	270	330
700	**75/65/20**	**252**	**397**	**563**	**336**	**584**	**737**	**375**	**689**	**869**
	55/45/20	123	195	279	165	283	355	184	335	420
800	**75/65/20**	**301**	**473**	**673**	**409**	**698**	**895**	**456**	**823**	**1 056**
	55/45/20	147	233	333	201	338	431	223	400	511
900	**75/65/20**	**350**	**548**	**783**	**481**	**812**	**1 053**	**536**	**957**	**1 242**
	55/45/20	171	270	388	236	393	507	263	465	601
1 000	**75/65/20**	**399**	**624**	**892**	**553**	**925**	**1 211**	**617**	**1 091**	**1 429**
	55/45/20	195	307	442	272	448	583	302	531	691
1 100	**75/65/20**	**448**	**699**	**1 002**	**625**	**1 039**	**1 369**	**698**	**1 225**	**1 615**
	55/45/20	219	344	496	307	503	659	342	596	781
1 200	**75/65/20**	**497**	**775**	**1 112**	**697**	**1 153**	**1 527**	**778**	**1 359**	**1 802**
	55/45/20	243	381	551	343	558	735	381	661	872
1 400	**75/65/20**	**595**	**926**	**1 331**	**842**	**1 380**	**1 843**	**939**	**1 627**	**2 175**
	55/45/20	291	456	659	414	668	888	460	791	1 052
1 600	**75/65/20**	**693**	**1 077**	**1 550**	**986**	**1 607**	**2 159**	**1 100**	**1 895**	**2 548**
	55/45/20	338	530	768	485	778	1 040	539	922	1 233
1 800	**75/65/20**	**791**	**1 228**	**1 769**	**1 130**	**1 834**	**2 475**	**1 261**	**2 164**	**2 921**
	55/45/20	386	604	876	556	888	1 192	618	1 052	1 413
2 000	**75/65/20**	**889**	**1 379**	**1 988**	**1 275**	**2 062**	**2 791**	**1 422**	**2 432**	**3 294**
	55/45/20	434	678	985	627	998	1 344	697	1 182	1 594
2 200	**75/65/20**	**987**	**1 530**	**2 208**	**1 419**	**2 289**	**3 108**	**1 584**	**2 700**	**3 667**
	55/45/20	482	753	1 094	698	1 108	1 497	776	1 313	1 774
2 400	**75/65/20**	**1 084**	**1 681**	**2 427**	**1 564**	**2 516**	**3 424**	**1 745**	**2 968**	**4 040**
	55/45/20	530	827	1 202	769	1 218	1 649	855	1 443	1 954
2 600	**75/65/20**	**1 182**	**1 832**	**2 646**	**1 708**	**2 744**	**3 740**	**1 906**	**3 236**	**4 413**
	55/45/20	578	901	1 311	840	1 328	1 801	934	1 573	2 135
2 800	**75/65/20**	**1 280**	**1 983**	**2 865**	**1 852**	**2 971**	**4 056**	**2 067**	**3 504**	**4 786**
	55/45/20	626	976	1 419	911	1 438	1 953	1 013	1 704	2 315
3 000	**75/65/20**	**1 378**	**2 134**	**3 085**	**1 997**	**3 198**	**4 372**	**2 228**	**3 772**	**5 159**
	55/45/20	673	1 050	1 528	982	1 548	2 106	1 092	1 834	2 496
Temperature exponent		**1.4021**	**1.3880**	**1.3752**	**1.3900**	**1.4204**	**1.4302**	**1.3958**	**1.4115**	**1.4215**

Measurements in mm.



KORALINE Basic LKB											
Length	$t_1/t_2/t_i$ [°C]	Height 300			Height 400			Height 500			
		Width 130	Width 180	Width 230	Width 130	Width 180	Width 230	Width 130	Width 180	Width 230	
600	**75/65/20**	**317**	**610**	**750**	**346**	**668**	**822**	**373**	**710**	**875**	
	55/45/20	155	298	364	169	328	402	181	350	430	
700	**75/65/20**	**404**	**757**	**955**	**441**	**829**	**1 047**	**474**	**881**	**1 114**	
	55/45/20	198	369	464	215	407	511	230	435	547	
800	**75/65/20**	**491**	**904**	**1 160**	**535**	**990**	**1 272**	**576**	**1 052**	**1 353**	
	55/45/20	240	441	563	261	486	621	280	520	664	
900	**75/65/20**	**578**	**1 051**	**1 365**	**630**	**1 151**	**1 497**	**678**	**1 224**	**1 592**	
	55/45/20	282	513	663	307	565	731	329	604	782	
1 000	**75/65/20**	**664**	**1 198**	**1 570**	**725**	**1 313**	**1 721**	**780**	**1 395**	**1 831**	
	55/45/20	325	585	763	353	644	841	378	689	899	
1 100	**75/65/20**	**751**	**1 346**	**1 775**	**819**	**1 474**	**1 946**	**882**	**1 567**	**2 070**	
	55/45/20	367	657	862	399	724	950	428	773	1 016	
1 200	**75/65/20**	**838**	**1 493**	**1 980**	**914**	**1 635**	**2 171**	**984**	**1 738**	**2 309**	
	55/45/20	410	729	962	445	803	1 060	477	858	1 134	
1 400	**75/65/20**	**1 011**	**1 787**	**2 390**	**1 103**	**1 958**	**2 620**	**1 187**	**2 081**	**2 787**	
	55/45/20	494	873	1 161	537	961	1 279	576	1 027	1 369	
1 600	**75/65/20**	**1 185**	**2 082**	**2 800**	**1 292**	**2 280**	**3 069**	**1 391**	**2 424**	**3 265**	
	55/45/20	579	1 016	1 360	629	1 120	1 499	675	1 197	1 603	
1 800	**75/65/20**	**1 358**	**2 376**	**3 210**	**1 481**	**2 603**	**3 519**	**1 594**	**2 766**	**3 743**	
	55/45/20	664	1 160	1 559	721	1 278	1 718	774	1 366	1 838	
2 000	**75/65/20**	**1 532**	**2 671**	**3 620**	**1 670**	**2 925**	**3 968**	**1 798**	**3 109**	**4 221**	
	55/45/20	749	1 304	1 758	814	1 436	1 938	873	1 535	2 073	
2 200	**75/65/20**	**1 705**	**2 965**	**4 030**	**1 860**	**3 248**	**4 418**	**2 002**	**3 452**	**4 699**	
	55/45/20	834	1 448	1 957	906	1 595	2 157	971	1 704	2 308	
2 400	**75/65/20**	**1 878**	**3 260**	**4 440**	**2 049**	**3 571**	**4 867**	**2 205**	**3 795**	**5 177**	
	55/45/20	918	1 591	2 156	998	1 753	2 377	1 070	1 874	2 542	
2 600	**75/65/20**	**2 052**	**3 554**	**4 850**	**2 238**	**3 893**	**5 317**	**2 409**	**4 138**	**5 655**	
	55/45/20	1 003	1 735	2 355	1 090	1 911	2 596	1 169	2 043	2 777	
2 800	**75/65/20**	**2 225**	**3 849**	**5 260**	**2 427**	**4 216**	**5 766**	**2 613**	**4 481**	**6 133**	
	55/45/20	1 088	1 879	2 554	1 182	2 070	2 816	1 268	2 212	3 012	
3 000	**75/65/20**	**2 399**	**4 143**	**5 670**	**2 616**	**4 538**	**6 215**	**2 816**	**4 823**	**6 612**	
	55/45/20	1 173	2 023	2 753	1 274	2 228	3 035	1 367	2 381	3 247	
Temperature exponent		**1.4009**	**1.4038**	**1.4139**	**1.4081**	**1.3927**	**1.4031**	**1.4153**	**1.3816**	**1.3923**	

Measurements in mm.

ORDER CODE

KORALINE	Natural convection	Type		Length [cm]		Height [cm]		Width [cm]		Convector connection	Heat exchanger colour	Material used	Grille type	Grille colour		Casing colour
L	K	B Basic	-	···	/	··	/	··	-	V counter-flow	1 without colour	S steel	P perforated	0 casing colour	-	10 RAL 9016 ** see colour chart p. 109 99 other RAL colour

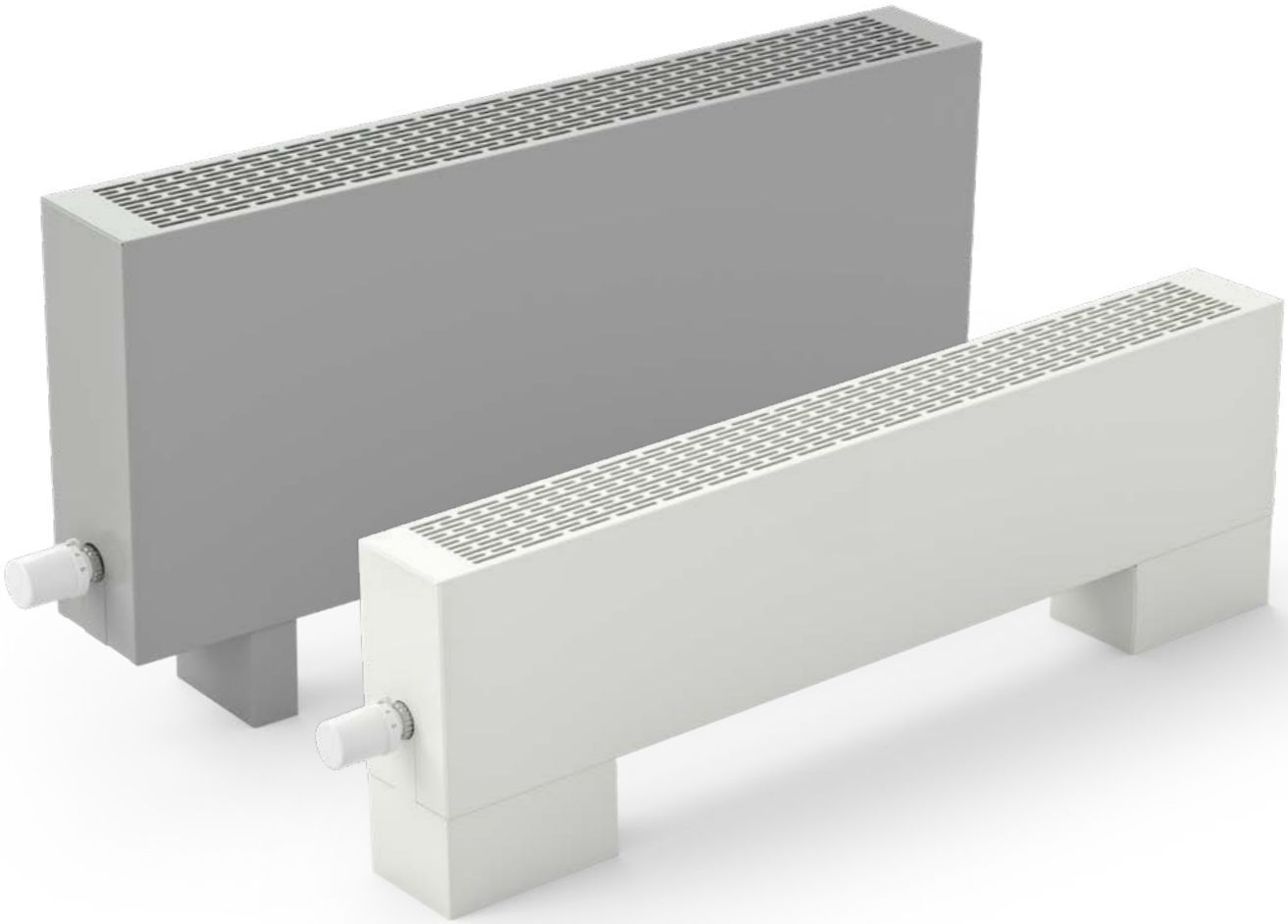
Example order code: LKB-140/23/18-V1SP0-10

KORALINE Basic LKB free-standing convector, Length 140 cm, Height 23 cm, Width 18 cm, Steel casing and grille white RAL 9016.

For calculations for other temperature gradients, see p. 81 or visit www.licon.cz

Further information

Assembly and mounting p. 51, Accessories p. 65,
Technical data p. 71, Colour chart p. 109



KORALINE Combi LKC

Free-standing convectors with natural convection, perforated safety grille and high-performance heat exchanger

KORALINE Combi LKC

Specifications

Height	230, 300, 400, 500 mm
Width	130, 180, 230 mm
Length	600, 700, 800, 900, 1 000, 1 100, 1 200, 1 400, 1 600, 1 800, 2 000, 2 200, 2 400, 2 600, 2 800, 3 000 mm
Output	from 405 to 7 400 W
Max. operating pressure	1.2 MPa
Max. operating temperature	110 °C
Max. surface temperature	40 °C
Connecting thread	inner G 1/2"
Connecting method	lower (recommended), side

KORALINE Combi LKC free-standing convectors are equipped with a high-performance heat exchanger with double fin area. The safety grille is perforated directly into the galvanized steel casing of the convectors making it an integral part of the convectors. The design and dimensions of the heat exchanger ensure highly efficient heat transfer. The entire model series achieves higher heat outputs. With more compact dimensions, maximum output and low surface temperature of the casing, these convectors are designed to be used for heating domestic homes, modern office buildings, commercial spaces and other large-scale projects.

Standard contents

- galvanized steel casing incorporating perforated safety grille, lacquered white RAL 9016
- high-performance Al/Cu heat exchanger for universal connections, low water content, bleed valve, and double the area of uniquely formed fins for maximum heat output
- magnetic side cover in casing colour
- axial thermostatic valve, M 30 × 1.5 thread (see p. 66)
- extension nipple, for convectors from 150 mm in height (see p. 66)
- floor-level brackets
- wall fixing mounts for convectors from 400 mm in height (see p. 53)
- assembly instructions and durable packaging

Optional accessories

- further RAL lacquers for casings available
- floor-level bracket casings (see p. 52)
- wall brackets (see p. 53)
- sub-floor brackets (see p. 53)
- elbow or straight lockshield (see p. 68)
- elbow or straight thermostatic valve (see p. 68)
- TEP 230 or TEP 24 thermoelectric actuator (see p. 66)
- SIEMENS RAA21 or RDE 100.1 room thermostat (see p. 68)
- QAA32 room temperature sensor (see p. 94)
- thermostatic head (see p. 67)
- thermostatic head with incorporated control and immersion remote sensor (see p. 67)

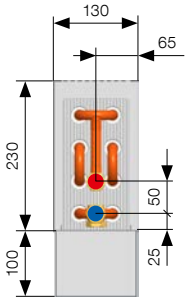
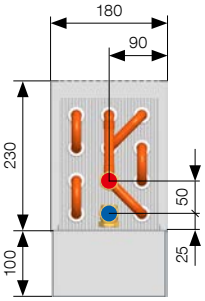
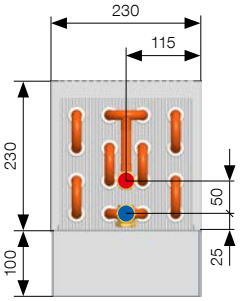
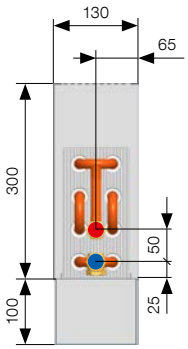
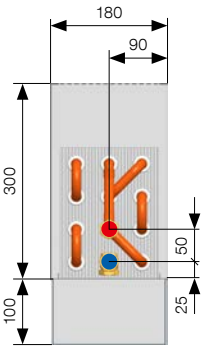
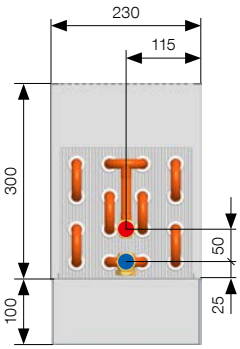
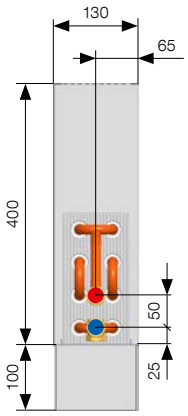
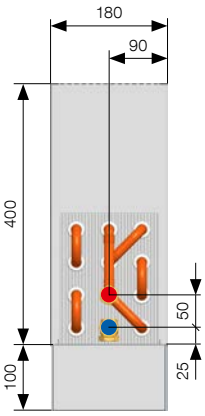
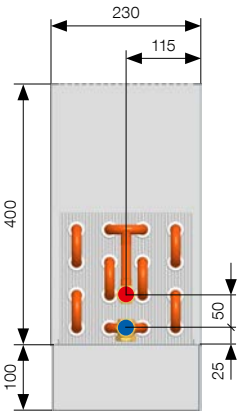
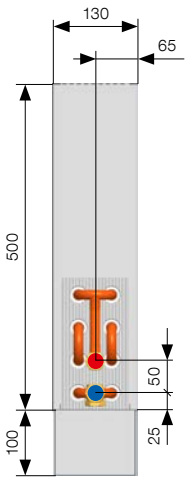
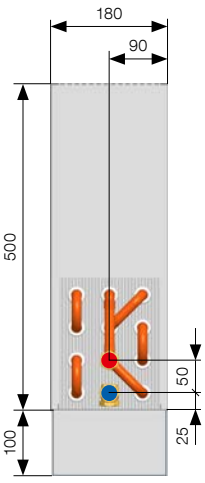
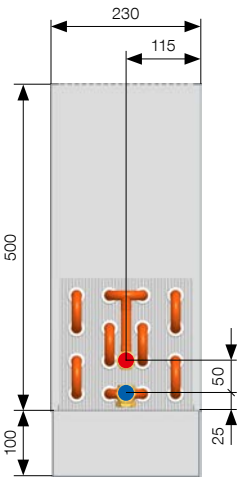
Casing incorporating perforated safety grille

High-performance heat exchanger with double area of fins

Optimal price / performance ration

Other RAL colour chart lacquers available

SUMMARY OF TYPES
KORALINE Combi LKC

HEIGHT	WIDTH 130 mm	WIDTH 180 mm	WIDTH 230 mm
HEIGHT 230 mm			
HEIGHT 300 mm			
HEIGHT 400 mm			
HEIGHT 500 mm			

Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm. Alterations to technical specifications reserved..

HEAT OUTPUTS

Heat output [W] where $t_1/t_2/t_i$ = 75/65/20 °C (Δt=50), and 55/45/20 °C (Δt=30) / EN 442

KORALINE Combi LKC													
Leght	$t_1/t_2/t_i$ [°C]	Height 230			Height 300			Height 400			Height 500		
		Width 130	Width 180	Width 230	Width 130	Width 180	Width 230	Width 130	Width 180	Width 230	Width 130	Width 180	Width 230
600	**75/65/20**	**405**	**588**	**802**	**437**	**633**	**865**	**470**	**680**	**931**	**494**	**714**	**979**
	55/45/20	199	286	386	216	308	418	233	333	452	246	351	477
700	**75/65/20**	**516**	**757**	**1 021**	**557**	**815**	**1 101**	**599**	**876**	**1 186**	**630**	**920**	**1 247**
	55/45/20	254	368	492	275	397	532	297	429	576	313	452	608
800	**75/65/20**	**627**	**926**	**1 240**	**676**	**997**	**1 338**	**728**	**1 072**	**1 440**	**765**	**1 126**	**1 514**
	55/45/20	308	450	597	334	486	646	361	525	699	381	553	738
900	**75/65/20**	**738**	**1 096**	**1 459**	**795**	**1 179**	**1 574**	**856**	**1 268**	**1 695**	**900**	**1 331**	**1 782**
	55/45/20	363	533	703	393	575	761	424	621	823	448	655	869
1 000	**75/65/20**	**848**	**1 265**	**1 678**	**915**	**1 362**	**1 810**	**985**	**1 464**	**1 949**	**1 035**	**1 537**	**2 049**
	55/45/20	417	615	808	451	664	875	488	717	946	515	756	999
1 100	**75/65/20**	**959**	**1 434**	**1 897**	**1 034**	**1 544**	**2 046**	**1 113**	**1 660**	**2 204**	**1 170**	**1 743**	**2 317**
	55/45/20	472	698	914	510	753	989	552	813	1 070	582	857	1 129
1 200	**75/65/20**	**1 070**	**1 604**	**2 116**	**1 154**	**1 726**	**2 283**	**1 242**	**1 856**	**2 458**	**1 305**	**1 949**	**2 585**
	55/45/20	526	780	1 019	569	842	1 103	615	909	1 193	650	958	1 260
1 400	**75/65/20**	**1 292**	**1 942**	**2 554**	**1 393**	**2 091**	**2 755**	**1 499**	**2 247**	**2 967**	**1 575**	**2 360**	**3 120**
	55/45/20	635	945	1 230	687	1 020	1 332	743	1 100	1 440	784	1 160	1 521
1 600	**75/65/20**	**1 513**	**2 281**	**2 992**	**1 631**	**2 455**	**3 228**	**1 756**	**2 639**	**3 476**	**1 845**	**2 772**	**3 655**
	55/45/20	744	1 109	1 442	805	1 197	1 560	870	1 292	1 687	919	1 363	1 782
1 800	**75/65/20**	**1 735**	**2 620**	**3 430**	**1 870**	**2 820**	**3 701**	**2 013**	**3 031**	**3 985**	**2 115**	**3 184**	**4 190**
	55/45/20	853	1 274	1 653	923	1 375	1 788	998	1 484	1 934	1 053	1 565	2 042
2 000	**75/65/20**	**1 956**	**2 959**	**3 868**	**2 109**	**3 185**	**4 173**	**2 270**	**3 423**	**4 494**	**2 386**	**3 595**	**4 725**
	55/45/20	962	1 439	1 864	1 041	1 553	2 017	1 125	1 676	2 181	1 187	1 767	2 303
2 200	**75/65/20**	**2 178**	**3 297**	**4 306**	**2 348**	**3 549**	**4 646**	**2 527**	**3 815**	**5 003**	**2 656**	**4 007**	**5 260**
	55/45/20	1 071	1 603	2 075	1 159	1 731	2 245	1 253	1 868	2 428	1 322	1 970	2 564
2 400	**75/65/20**	**2 399**	**3 636**	**4 744**	**2 587**	**3 914**	**5 119**	**2 784**	**4 207**	**5 512**	**2 926**	**4 418**	**5 795**
	55/45/20	1 180	1 768	2 286	1 277	1 909	2 474	1 380	2 060	2 676	1 456	2 172	2 825
2 600	**75/65/20**	**2 621**	**3 975**	**5 182**	**2 826**	**4 278**	**5 591**	**3 041**	**4 599**	**6 021**	**3 196**	**4 830**	**6 330**
	55/45/20	1 289	1 933	2 497	1 394	2 086	2 702	1 507	2 252	2 923	1 591	2 374	3 086
2 800	**75/65/20**	**2 842**	**4 313**	**5 621**	**3 065**	**4 643**	**6 064**	**3 298**	**4 990**	**6 530**	**3 466**	**5 241**	**6 865**
	55/45/20	1 398	2 098	2 708	1 512	2 264	2 930	1 635	2 444	3 170	1 725	2 577	3 347
3 000	**75/65/20**	**3 064**	**4 652**	**6 059**	**3 303**	**5 007**	**6 536**	**3 556**	**5 382**	**7 039**	**3 736**	**5 653**	**7 400**
	55/45/20	1 507	2 262	2 919	1 630	2 442	3 159	1 762	2 635	3 417	1 860	2 779	3 608
Temperature exponent		**1.3885**	**1.4113**	**1.4295**	**1.3826**	**1.4058**	**1.4236**	**1.3741**	**1.3979**	**1.4151**	**1.3657**	**1.3900**	**1.4065**

Measurements in mm.

For convector composition see page 31.

ORDER CODE

KORALINE	Natural convection	Type		Length [cm]		Height [cm]		Width [cm]		Convector connection	Heat exchanger colour	Material used	Grille type	Grille colour		Casing colour
L	K	C Combi	-	···	/	··	/	··	-	V counter-flow	1 without colour	S steel	P perforated	0 casing colour	-	10 RAL 9016 ** see colour chart p. 109 99 other RAL colour

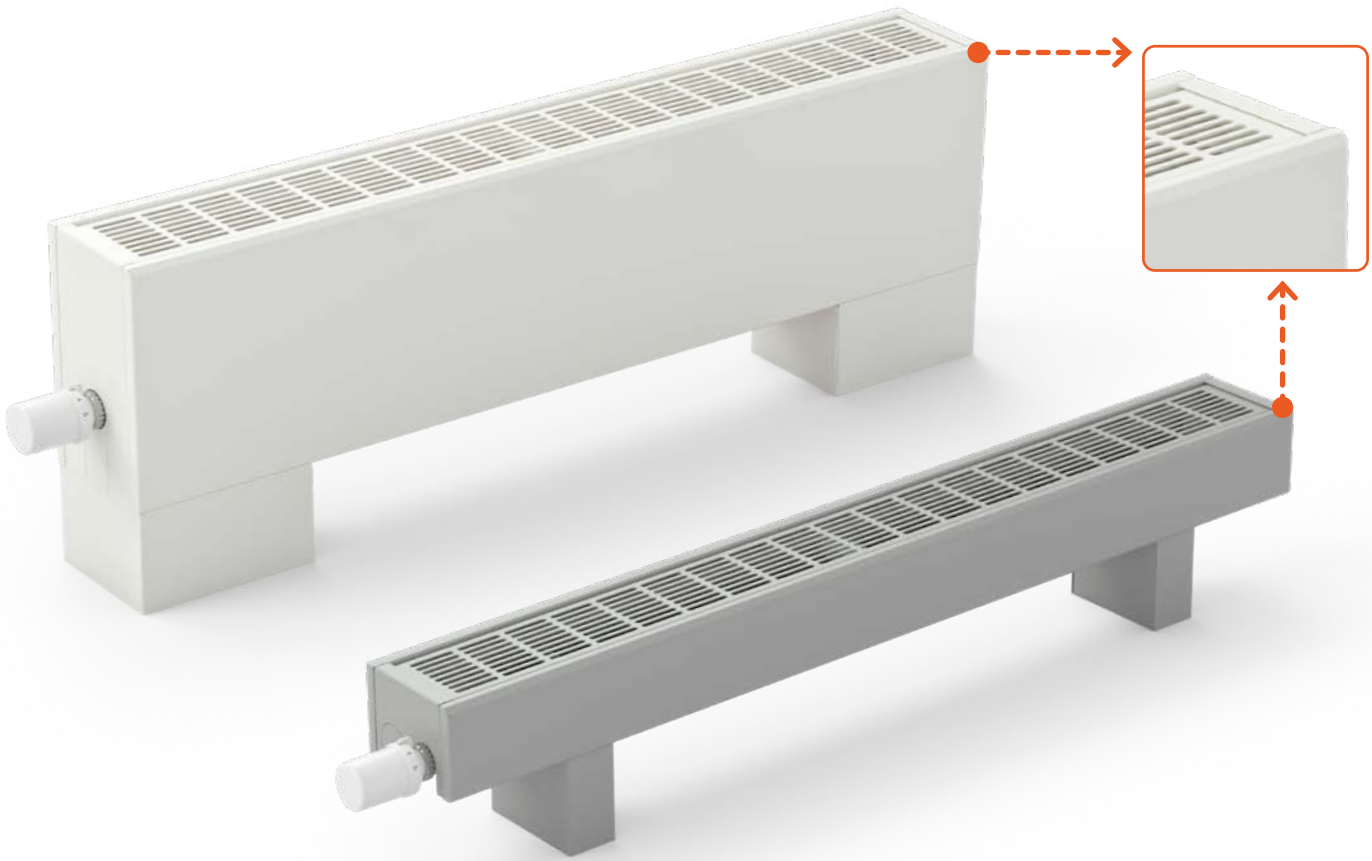
Example order code: LKC-140/23/18-V1SP0-10

KORALINE Combi free-standing convector, Length 140 cm, Height 23 cm, Width 18 cm, Steel casing and grille white RAL 9016.

For calculations for other temperature gradients, see p. 81 or visit www.licon.cz

Further information

Assembly and mounting p. 51, Accessories p. 65,
Technical data p. 71, Colour chart p. 109



SAFETY DESIGN

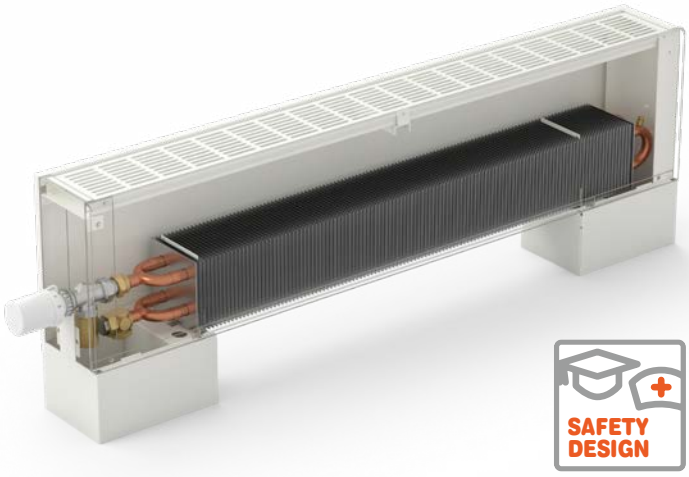
KORALINE Safe LKS

Free-standing convectors with natural convection and safety features

KORALINE Safe LKS

Specifications

Height	90, 150, 230, 300, 400, 500 mm
Width	80, 130, 180, 230 mm
Length	600, 700, 800, 900, 1 000, 1 100, 1 200, 1 400, 1 600, 1 800, 2 000 mm
Output	from 149 to 4 221 W
Max. operating pressure	1.2 MPa
Max. operating temperature	110 °C
Max. surface temperature	40 °C
Connecting thread	inner G 1/2"
Connection method	lower (recommended), side



The **KORALINE Safe LKS** special model range of convectors is designed to ensure high unit safety. For increased durability, the casing of the convectors is made of 1.5 mm thick galvanized sheet steel and fitted with a symmetric safety pencilproof grille. The grille comprises perforated holes of small dimensions. The grille is locked in the convector preventing it from being easily removed by unauthorised persons. The Safe convector series has a bevelled edge on the front of the casing to prevent potential injury. The heat exchanger and the casing are fitted with safety locks to prevent removal by unauthorised persons. These safety features, together with the low surface temperature, make the KORALINE Safe LKS series particularly suitable for installation in educational, health and care facilities, administrative and public areas.

Standard contents

- symmetric safety pencilproof grille, RAL 9016 white
- 1.5 mm thick galvanized steel casing, RAL 9016 white with bevelled front edge for increased safety
- Al/Cu low water volume heat exchanger for universal connections, bleed valve, uniquely shaped fins for max. heat output, incl. safety fixture
- fixed side cover (fixed from the inside of the convector during installation to prevent removal by unauthorised persons)
- axial thermostatic valve, M 30 × 1.5 thread (see p. 66)
- extension nipple for convectors from 150 mm in heigh (see p. 66)
- floor-level brackets with heat exchanger safety lock
- wall fixing mounts for convectors from 230 mm in height (see p. 53)
- assembly instructions and durable packaging

Optional accessories

- further RAL lacquers for casings and for grilles available
- floor-level bracket casings with safety features (see p. 52)
- wall brackets with heat exchanger safety lock (see p. 53)
- sub-floor brackets with heat exchanger safety lock (see p. 53)
- elbow or straight lockshield (see p. 68)
- elbow or straight thermostatic valve (see p. 68)
- TEP 230 or TEP 24 thermoelectric actuator (see p. 66)
- SIEMENS RAA21 or RDE 100.1 room thermostat (see p. 68)
- QAA32 room temperature sensor (see p. 94)
- thermostatic head (see p. 67)
- thermostatic head with incorporated control and immersion remote sensor (see p. 67)

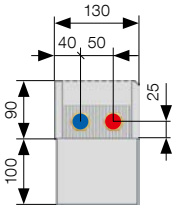
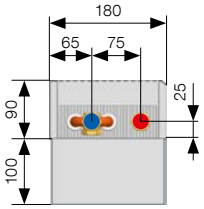
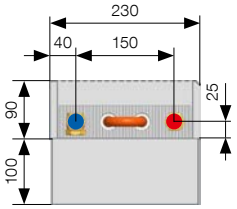
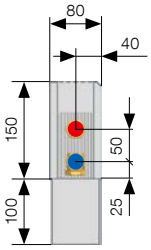
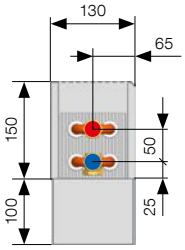
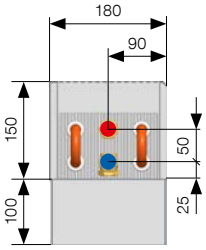
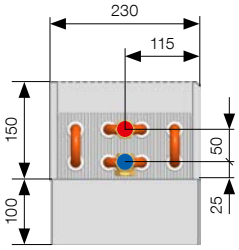
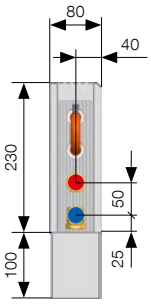
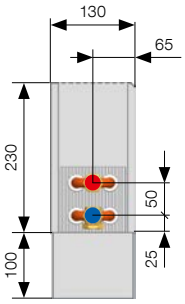
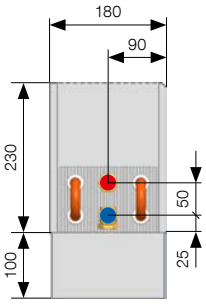
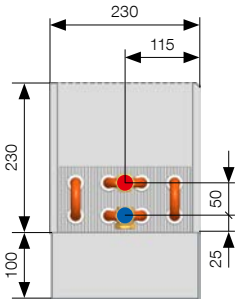
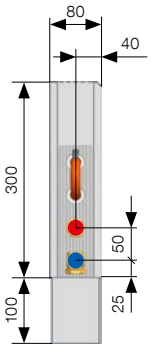
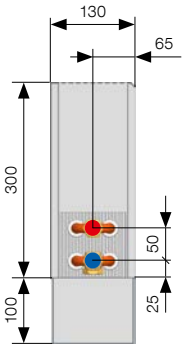
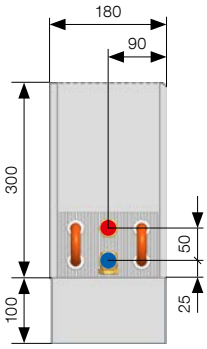
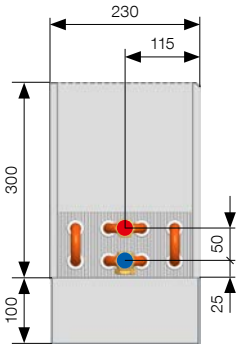
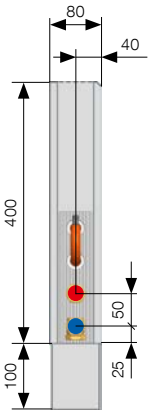
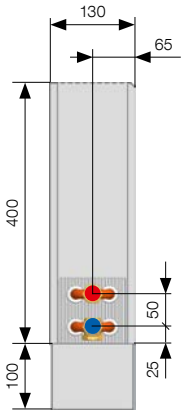
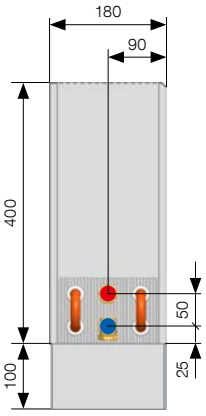
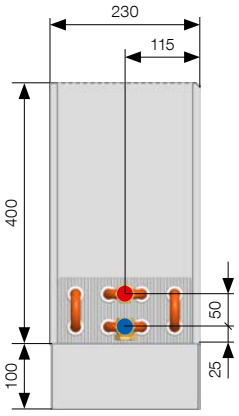
Locable symmetric safety grille

Pencilproof grille

Bevelled front edge

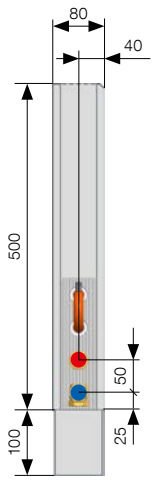
Increased durability 1.5 mm thick casing

SUMMARY OF TYPES
KORALINE Safe LKS

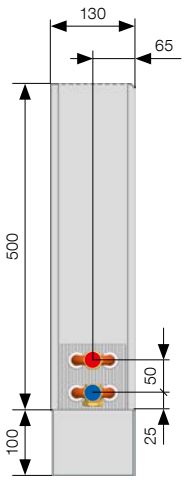
HEIGHT	WIDTH 80 mm	WIDTH 130 mm	WIDTH 180 mm	WIDTH 230 mm
HEIGHT 90 mm				
HEIGHT 150 mm				
HEIGHT 230 mm				
HEIGHT 300 mm				
HEIGHT 400 mm				

Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm. Alterations to technical specifications reserved.

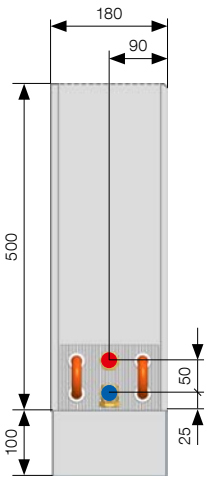
WIDTH
80 mm



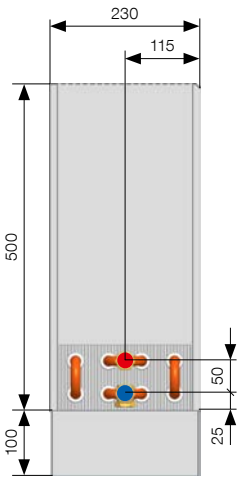
WIDTH
130 mm



WIDTH
180 mm



WIDTH
230 mm

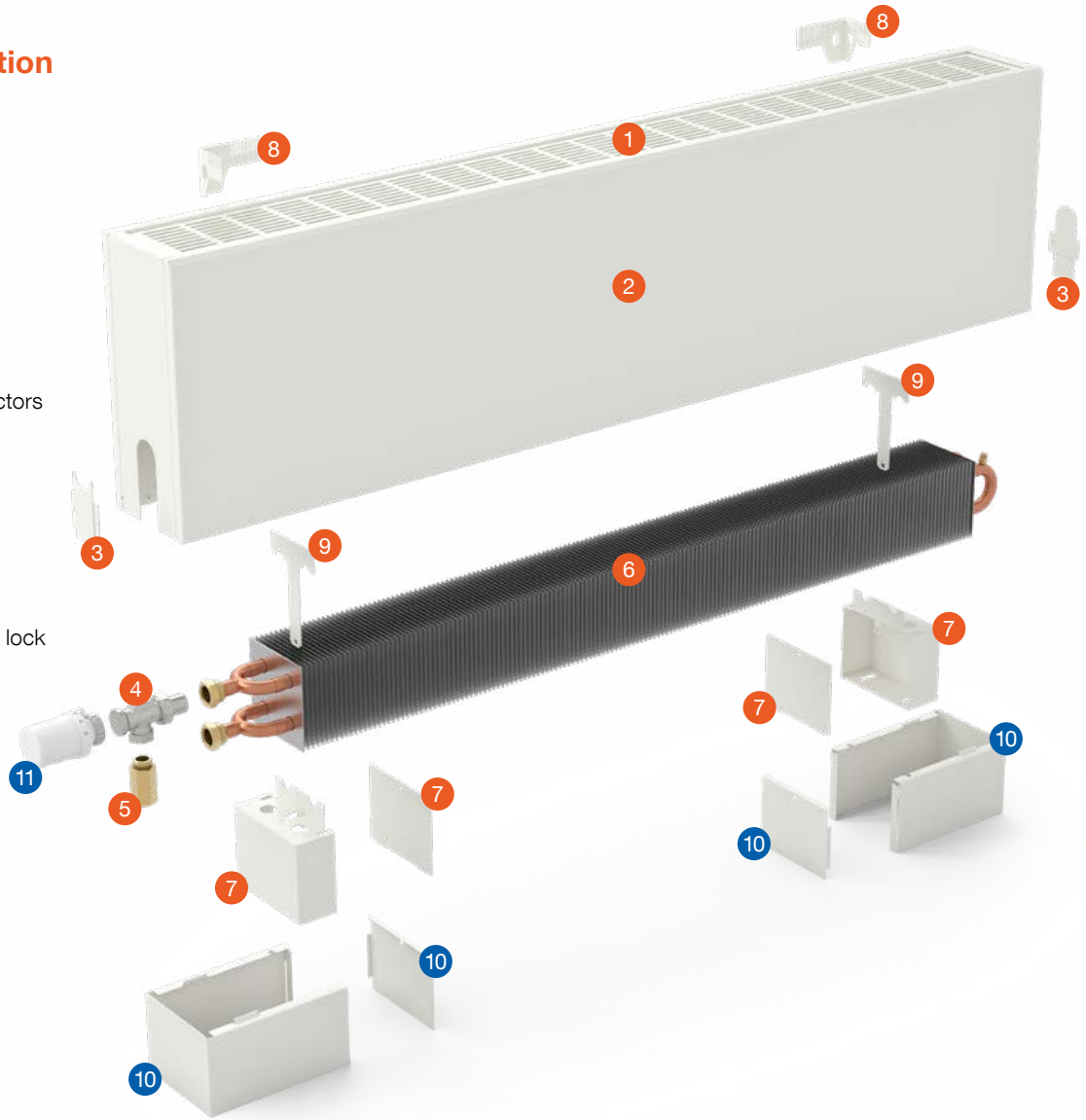


HEIGHT
500 mm

Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm. Alterations to technical specifications reserved.

Convector composition

1. symmetric safety pencilproof grille
2. galvanized steel casing
3. fixed side cover in casing colour
4. axial thermostatic valve
5. extension nipple for convectors from 150 mm in height
6. Al/Cu heat exchanger
7. floor-level brackets
8. wall fixing mounts for convectors from 230 mm in height
9. heat exchanger with safety lock
10. floor-level bracket casing with safety lock
11. thermostatic head



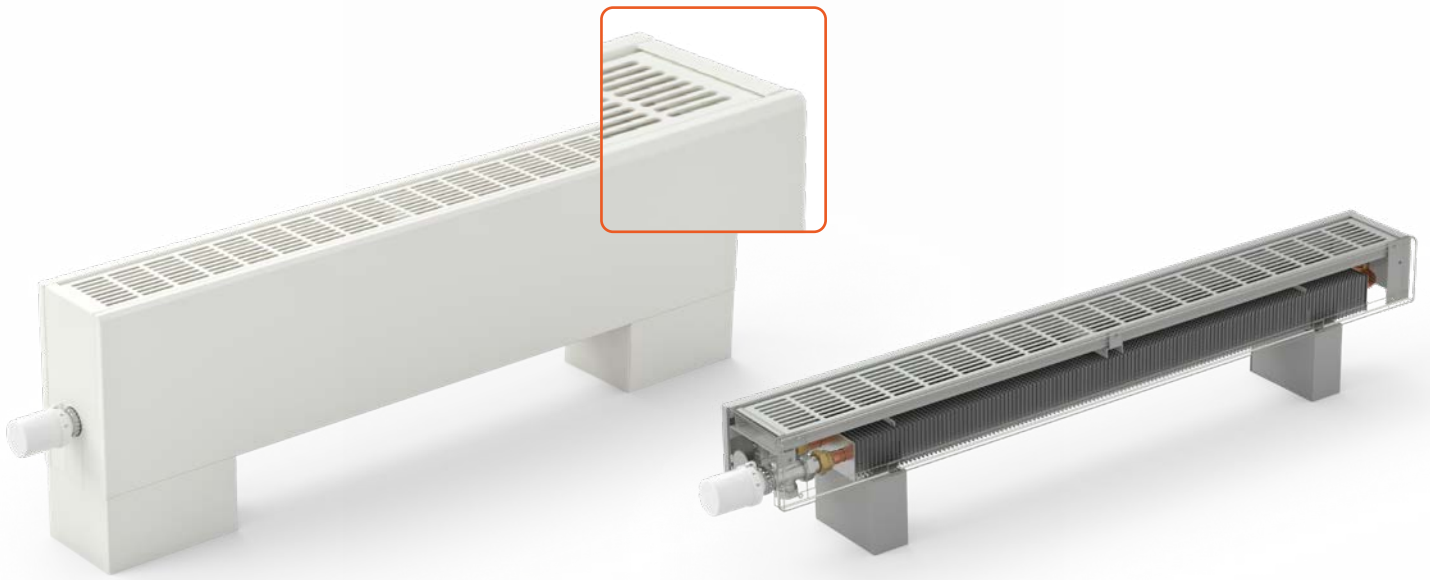
● Standard contents
● Optional accessories:
For KORALINE Safe LKS see p. 39,
For KORALINE Max LKM see p. 45

HEAT OUTPUTS

Heat output [W] where $t_1/t_2/t_i$ = 75/65/20 °C (Δt=50), and 55/45/20 °C (Δt=30) / EN 442

KORALINE Safe LKS												
Length	$t_1/t_2/t_i$ [°C]	Height 90			Height 150				Height 230			
		Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230
600	**75/65/20**	**203**	**322**	**454**	**149**	**264**	**471**	**579**	**208**	**295**	**555**	**683**
	55/45/20	99	158	225	71	130	228	279	100	145	270	330
700	**75/65/20**	**252**	**397**	**563**	**185**	**336**	**584**	**737**	**258**	**375**	**689**	**869**
	55/45/20	123	195	279	88	165	283	355	125	184	335	420
800	**75/65/20**	**301**	**473**	**673**	**221**	**409**	**698**	**895**	**308**	**456**	**823**	**1 056**
	55/45/20	147	233	333	105	201	338	431	149	223	400	511
900	**75/65/20**	**350**	**548**	**783**	**257**	**481**	**812**	**1 053**	**358**	**536**	**957**	**1 242**
	55/45/20	171	270	388	122	236	393	507	173	263	465	601
1 000	**75/65/20**	**399**	**624**	**892**	**293**	**553**	**925**	**1 211**	**408**	**617**	**1 091**	**1 429**
	55/45/20	195	307	442	140	272	448	583	197	302	531	691
1 100	**75/65/20**	**448**	**699**	**1 002**	**329**	**625**	**1 039**	**1 369**	**459**	**698**	**1 225**	**1 615**
	55/45/20	219	344	496	157	307	503	659	221	342	596	781
1 200	**75/65/20**	**497**	**775**	**1 112**	**365**	**697**	**1 153**	**1 527**	**509**	**778**	**1 359**	**1 802**
	55/45/20	243	381	551	174	343	558	735	246	381	661	872
1 400	**75/65/20**	**595**	**926**	**1 331**	**437**	**842**	**1 380**	**1 843**	**609**	**939**	**1 627**	**2 175**
	55/45/20	291	456	659	208	414	668	888	294	460	791	1 052
1 600	**75/65/20**	**693**	**1 077**	**1 550**	**509**	**986**	**1 607**	**2 159**	**709**	**1 100**	**1 895**	**2 548**
	55/45/20	338	530	768	243	485	778	1 040	343	539	922	1 233
1 800	**75/65/20**	**791**	**1 228**	**1 769**	**581**	**1 130**	**1 834**	**2 475**	**810**	**1 261**	**2 164**	**2 921**
	55/45/20	386	604	876	277	556	888	1 192	391	618	1 052	1 413
2 000	**75/65/20**	**889**	**1 379**	**1 988**	**653**	**1 275**	**2 062**	**2 791**	**910**	**1 422**	**2 432**	**3 294**
	55/45/20	434	678	985	311	627	998	1 344	439	697	1 182	1 594
Temperature exponent		**1.4021**	**1.,3880**	**1.3752**	**1.4503**	**1.3900**	**1.4204**	**1.4302**	**1.4250**	**1.3958**	**1.4115**	**1.4215**

Measurements in mm.



KORALINE Safe LKS															
Length	$t_1/t_2/t_i$ [°C]	Height 300				Height 400				Height 500					
		Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230		
600	**75/65/20**	**223**	**317**	**610**	**750**	**243**	**346**	**668**	**822**	**261**	**373**	**710**	**875**		
	55/45/20	108	155	298	364	117	169	328	402	125	181	350	430		
700	**75/65/20**	**277**	**404**	**757**	**955**	**302**	**441**	**829**	**1 047**	**324**	**474**	**881**	**1 114**		
	55/45/20	133	198	369	464	145	215	407	511	155	230	435	547		
800	**75/65/20**	**331**	**491**	**904**	**1 160**	**360**	**535**	**990**	**1 272**	**387**	**576**	**1 052**	**1 353**		
	55/45/20	159	240	441	563	173	261	486	621	185	280	520	664		
900	**75/65/20**	**385**	**578**	**1 051**	**1 365**	**419**	**630**	**1 151**	**1 497**	**450**	**678**	**1 224**	**1 592**		
	55/45/20	185	282	513	663	201	307	565	731	215	329	604	782		
1 000	**75/65/20**	**439**	**664**	**1 198**	**1 570**	**477**	**725**	**1 313**	**1 721**	**513**	**780**	**1 395**	**1 831**		
	55/45/20	211	325	585	763	229	353	644	841	245	378	689	899		
1 100	**75/65/20**	**493**	**751**	**1 346**	**1 775**	**536**	**819**	**1 474**	**1 946**	**576**	**882**	**1 567**	**2 070**		
	55/45/20	237	367	657	862	257	399	724	950	275	428	773	1 016		
1 200	**75/65/20**	**547**	**838**	**1 493**	**1 980**	**595**	**914**	**1 635**	**2 171**	**639**	**984**	**1 738**	**2 309**		
	55/45/20	263	410	729	962	286	445	803	1 060	306	477	858	1 134		
1 400	**75/65/20**	**654**	**1 011**	**1 787**	**2 390**	**712**	**1 103**	**1 958**	**2 620**	**765**	**1 187**	**2 081**	**2 787**		
	55/45/20	315	494	873	1 161	342	537	961	1 279	366	576	1 027	1 369		
1 600	**75/65/20**	**762**	**1 185**	**2 082**	**2 800**	**829**	**1 292**	**2 280**	**3 069**	**891**	**1 391**	**2 424**	**3 265**		
	55/45/20	367	579	1 016	1 360	398	629	1 120	1 499	426	675	1 197	1 603		
1 800	**75/65/20**	**870**	**1 358**	**2 376**	**3 210**	**947**	**1 481**	**2 603**	**3 519**	**1 017**	**1 594**	**2 766**	**3 743**		
	55/45/20	419	664	1 160	1 559	454	721	1 278	1 718	486	774	1 366	1 838		
2 000	**75/65/20**	**978**	**1 532**	**2 671**	**3 620**	**1 064**	**1 670**	**2 925**	**3 968**	**1 143**	**1 798**	**3 109**	**4 221**		
	55/45/20	471	749	1 304	1 758	511	814	1 436	1 938	547	873	1 535	2 073		
Temperature exponent		**1.4298**	**1.4009**	**1.4038**	**1.4139**	**1.4367**	**1.4081**	**1.3927**	**1.4031**	**1.4436**	**1.4153**	**1.3816**	**1.3923**		

Measurements in mm.

ORDER CODE

KORALINE	Natural convection	Type	Length [cm]		Height [cm]		Width [cm]	Convector connection	Heat exchanger colour	Material used	Grille type	Grille colour	Casing colour
L	K	S Safe	- ···	/	··	/	··	- V counter-flow	1 without colour	S steel	P perforated	0 casing colour	- 10 RAL 9016 ** see colour chart p. 109 99 other RAL colour

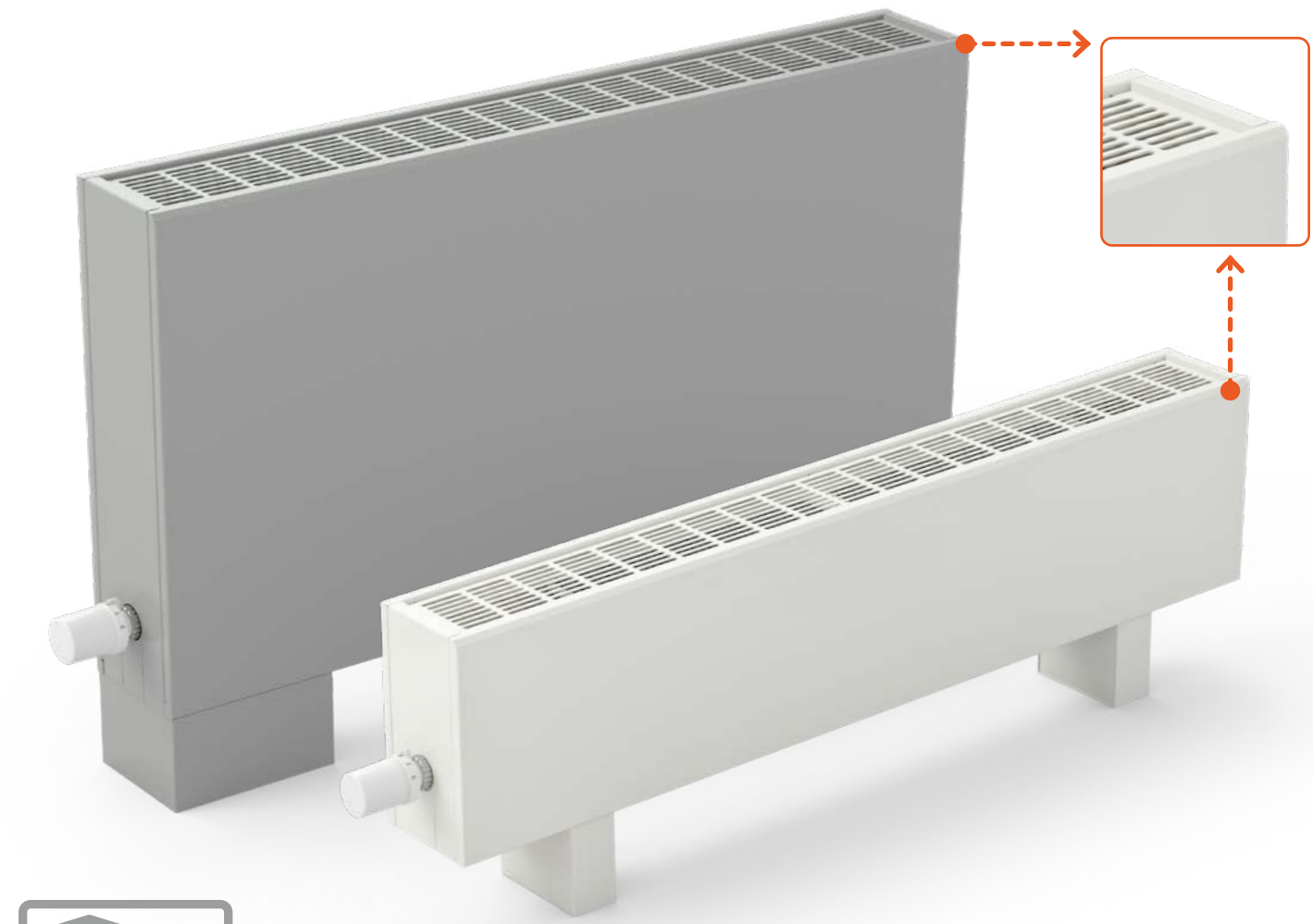
Example order code: LKS-140/23/18-V1SP0-10

KORALINE Safe free-standing convector, length 140 cm, height 23 cm, width 18 cm, Steel casing white RAL 9016, symmetric safety pencilproof grille in casing colour.

For calculations for other temperature gradients, see p. 81 or visit www.licon.cz

Further information

Assembly and mounting p. 51, Accessories p. 65,
Technical data p. 71, Colour chart p. 109



SAFETY DESIGN

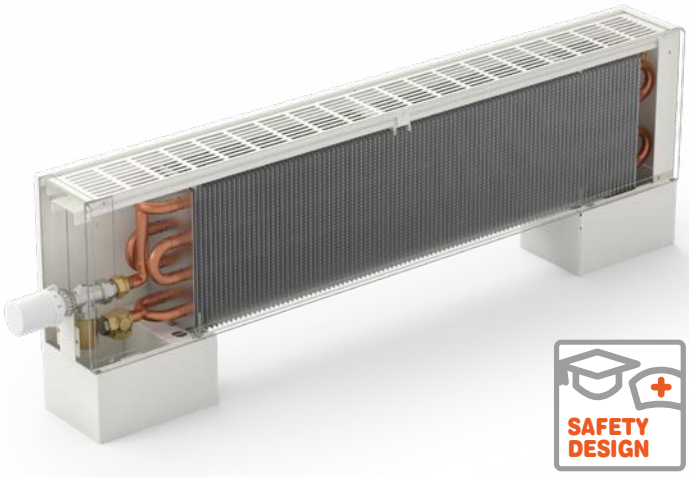
KORALINE Max LKM

Free-standing convectors with natural convection, high-performance heat exchanger and safety features

KORALINE Max LKM

Specifications

Height	230, 300, 400, 500, 600, 700, 800 mm
Width	80, 130, 180, 230 mm
Length	600, 700, 800, 900, 1 000, 1 100, 1 200, 1 400, 1 600, 1 800, 2 000 mm
Output	from 220 to 5 096 W
Max. operating pressure	1.2 MPa
Max. operating temperature	110 °C
Max. surface temperature	40 °C
Connecting thread	inner G 1/2"
Connection method	lower (recommended), side



The exclusive **KORALINE Max LKM** series of convectors combines high safety and maximum heating output. For increased safety, the casing of KORALINE Max LKM convectors is made of 1.5 mm thick galvanized sheet steel and is also fitted with a symmetric safety pencilproof grille. The grille comprises perforated holes of small dimensions. The grille is locked in the convector preventing easy removal by unauthorised persons. The Max series of convectors have a bevelled front edge to prevent potential injury. Heat exchanger bodies are fitted with safety locks to prevent removal by unauthorised persons. This model series also includes high-performance heat exchangers with double the area of uniquely shaped fins. The KORALINE Max range of convectors is particularly suited to schools, nurseries, hospitals, office or commercial premises and wherever there is a need to combine safety with high heat output and design.

Standard contents

- symmetric safety pencilproof grille RAL 9016 white
- 1.5 mm thick galvanized steel RAL 9016 white casing, with bevelled front edge for increased safety
- high-performance Al/Cu heat exchanger for universal connections, bleeding valve and double the area of uniquely shaped fins for maximum heat output
- fixed side cover (fixed from the inside of the convector during installation to prevent removal by unauthorised persons)
- axial thermostatic valve, thread M 30 × 1.5 (see p. 66)
- extension nipple for convectors from 150mm in height (see p. 66)
- floor-level brackets with safety lock on heat exchanger
- wall fixing mounts for convectors from 230 mm in height (see p. 53)
- assembly instructions and durable packaging

Optional accessories

- further RAL lacquers for casings and for grilles available
- floor-level bracket casings with safety features (see p. 52)
- wall brackets with heat exchanger safety lock (see p. 53)
- sub-floor brackets with heat exchanger safety lock (see p. 53)
- elbow or straight lockshield (see p. 68)
- elbow or straight thermostatic valve (see p. 68)
- TEP 230 or TEP 24 thermoelectric actuator (see p. 66)
- SIEMENS RAA21 or RDE 100.1 room thermostat (see p. 68)
- QAA32 room temperature sensor (see p. 94)
- thermostatic head (see p. 67)
- thermostatic head with incorporated control and immersion remote sensor (see p. 67)

Locable symmetric safety grille

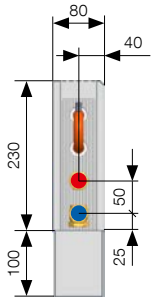
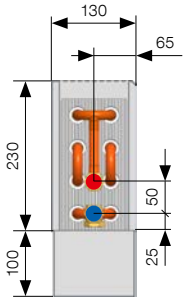
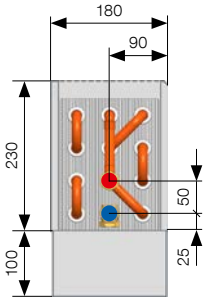
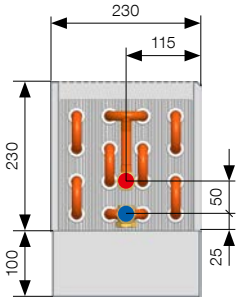
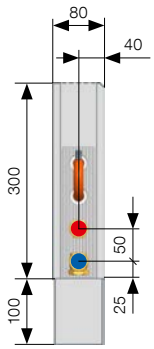
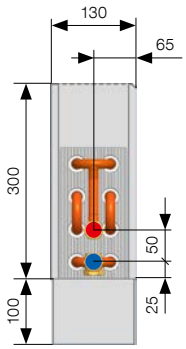
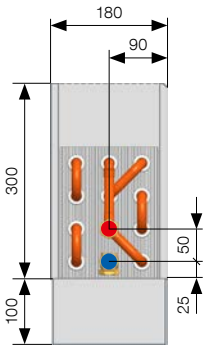
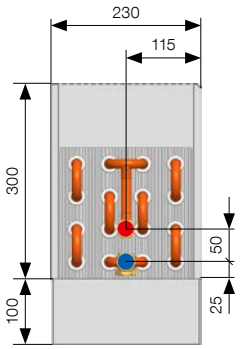
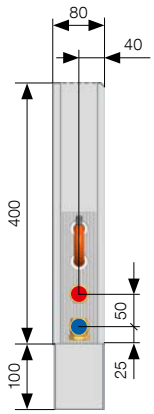
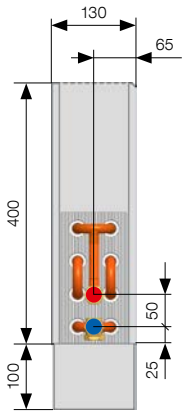
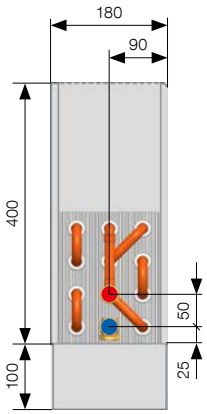
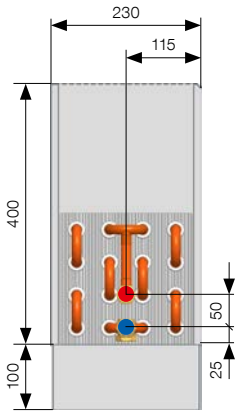
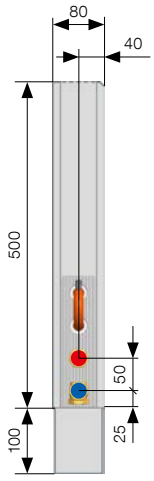
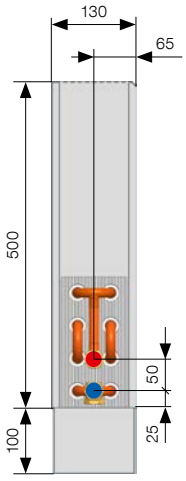
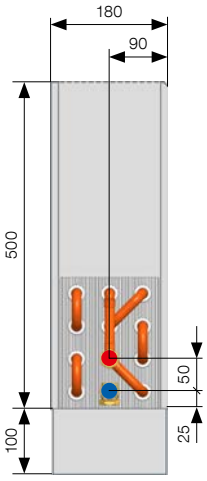
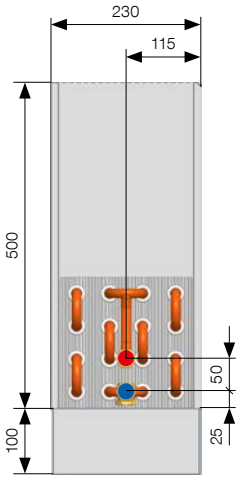
Pencilproof grille

High-performance heat exchanger with double fin area

Bevelled front edge for increased safety

Increased durability 1.5 mm thick casing

SUMMARY OF TYPES
KORALINE Max LKM

HEIGHT	WIDTH 80 mm	WIDTH 130 mm	WIDTH 180 mm	WIDTH 230 mm
HEIGHT 230 mm				
HEIGHT 300 mm				
HEIGHT 400 mm				
HEIGHT 500 mm				

Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm. Alterations to technical specifications reserved.

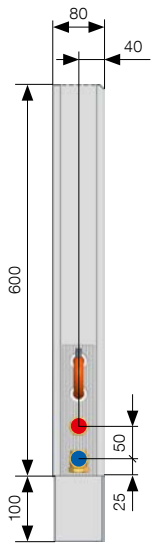
WIDTH
80 mm

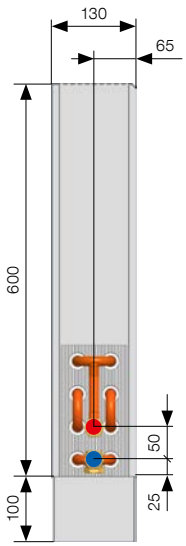
WIDTH
130 mm

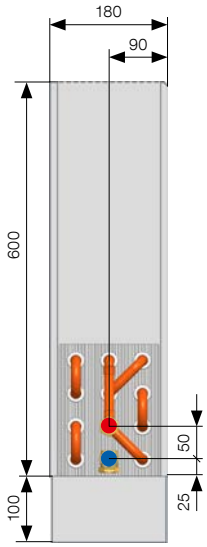
WIDTH
180 mm

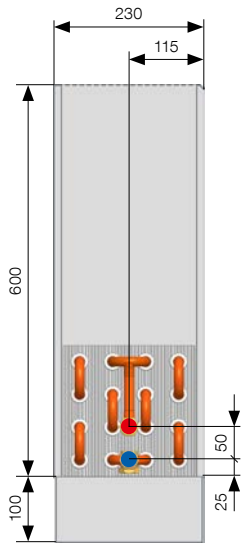
WIDTH
230 mm

HEIGHT
600 mm

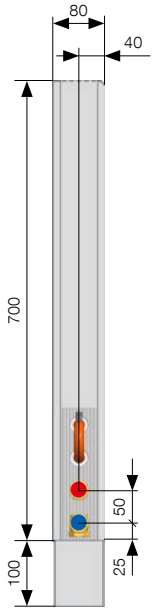


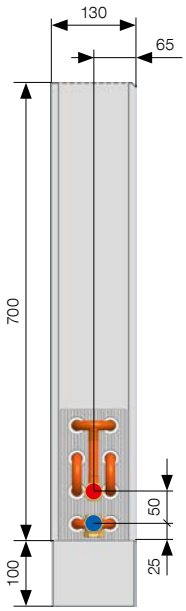


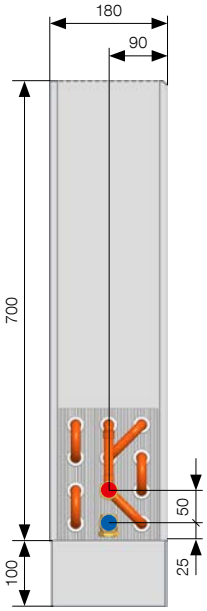


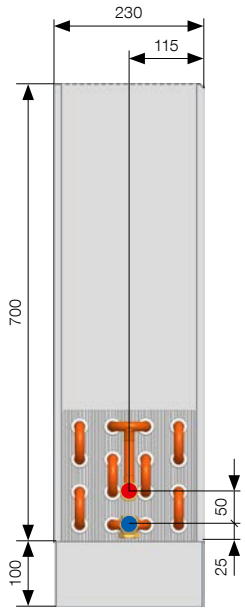


HEIGHT
700 mm

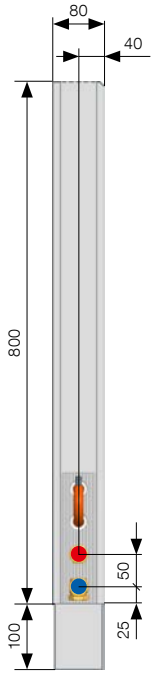


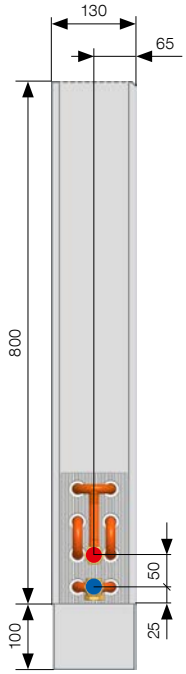


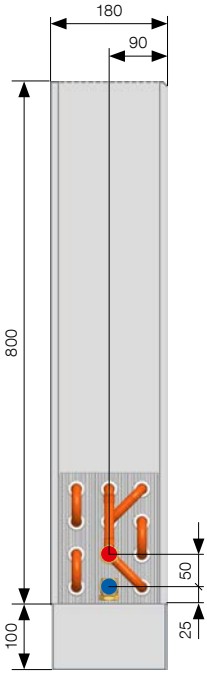


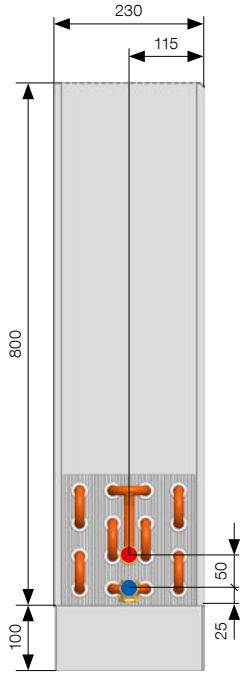


HEIGHT
800 mm









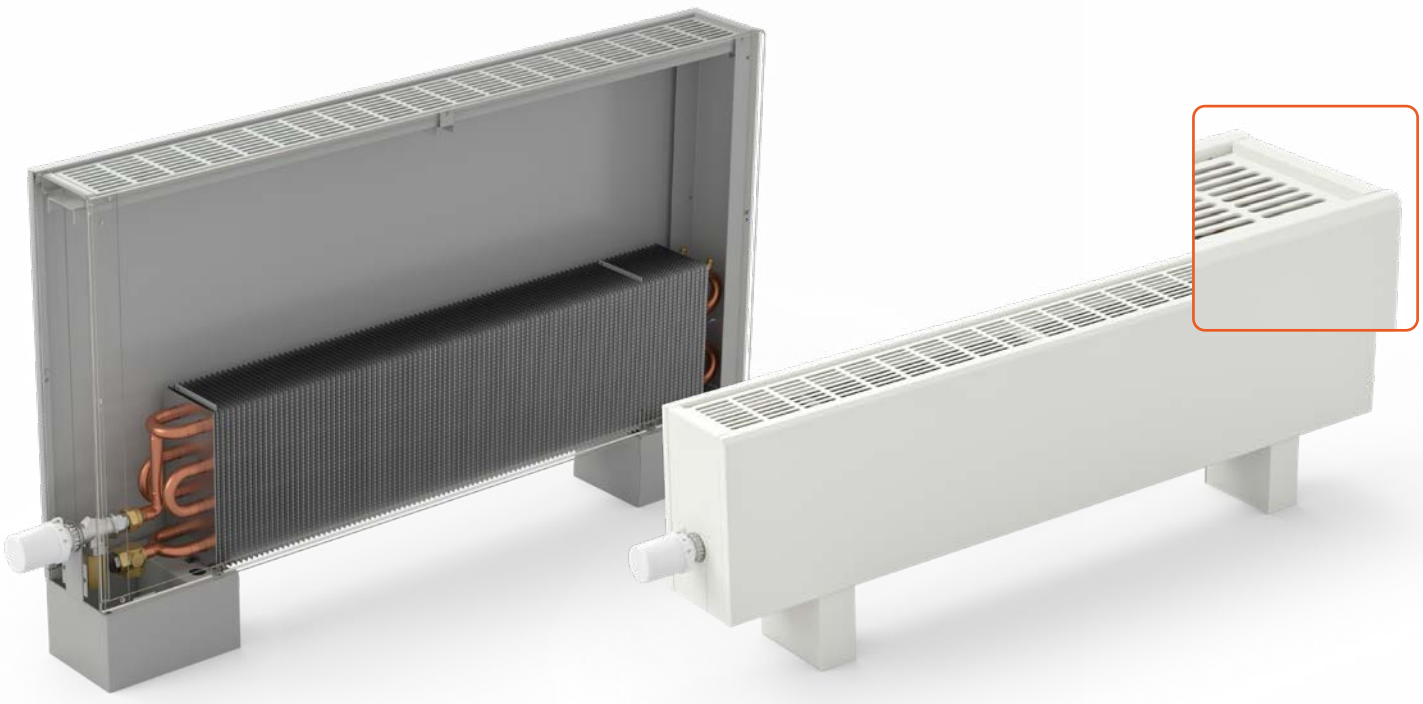
Floor-level bracket height above floor level for all KORALINE models is 100 mm. Measurements in mm. Alterations to technical specifications reserved.

HEAT OUTPUTS

Heat output [W] where $t_1/t_2/t_i$ = 75/65/20 °C (Δt=50), and 55/45/20 °C (Δt=30) / EN 442

KORALINE Max LKM													
Length	$t_1/t_2/t_i$ [°C]	Height 230				Height 300				Height 400			
		Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230
600	**75/65/20**	**220**	**405**	**588**	**802**	**236**	**437**	**633**	**865**	**254**	**470**	**680**	**931**
	55/45/20	112	199	286	386	119	216	308	418	129	233	333	452
700	**75/65/20**	**274**	**516**	**757**	**1 021**	**292**	**557**	**815**	**1 101**	**316**	**599**	**876**	**1 186**
	55/45/20	139	254	368	492	148	275	397	532	160	297	429	576
800	**75/65/20**	**327**	**627**	**926**	**1 240**	**349**	**676**	**997**	**1 338**	**377**	**728**	**1 072**	**1 440**
	55/45/20	166	308	450	597	177	334	486	646	191	361	525	699
900	**75/65/20**	**380**	**738**	**1 096**	**1 459**	**406**	**795**	**1 179**	**1 574**	**438**	**856**	**1 268**	**1 695**
	55/45/20	193	363	533	703	206	393	575	761	222	424	621	823
1 000	**75/65/20**	**433**	**848**	**1 265**	**1 678**	**463**	**915**	**1 362**	**1 810**	**500**	**985**	**1 464**	**1 949**
	55/45/20	220	417	615	808	235	451	664	875	253	488	717	946
1 100	**75/65/20**	**487**	**959**	**1 434**	**1 897**	**520**	**1 034**	**1 544**	**2 046**	**561**	**1 113**	**1 660**	**2 204**
	55/45/20	247	472	698	914	264	510	753	989	284	552	813	1 070
1 200	**75/65/20**	**540**	**1 070**	**1 604**	**2 116**	**577**	**1 154**	**1 726**	**2 283**	**623**	**1 242**	**1 856**	**2 458**
	55/45/20	274	526	780	1 019	292	569	842	1 103	315	615	909	1 193
1 400	**75/65/20**	**647**	**1 292**	**1 942**	**2 554**	**691**	**1 393**	**2 091**	**2 755**	**745**	**1 499**	**2 247**	**2 967**
	55/45/20	328	635	945	1 230	350	687	1 020	1 332	377	743	1 100	1 440
1 600	**75/65/20**	**753**	**1 513**	**2 281**	**2 992**	**804**	**1 631**	**2 455**	**3 228**	**868**	**1 756**	**2 639**	**3 476**
	55/45/20	382	744	1 109	1 442	408	805	1 197	1 560	439	870	1 292	1 687
1 800	**75/65/20**	**860**	**1 735**	**2 620**	**3 430**	**918**	**1 870**	**2 820**	**3 701**	**991**	**2 013**	**3 031**	**3 985**
	55/45/20	437	853	1 274	1 653	465	923	1 375	1 788	501	998	1 484	1 934
2 000	**75/65/20**	**966**	**1 956**	**2 959**	**3 868**	**1 032**	**2 109**	**3 185**	**4 173**	**1 114**	**2 270**	**3 423**	**4 494**
	55/45/20	491	962	1 439	1 864	523	1 041	1 553	2 017	563	1 125	1 676	2 181
Temperature exponent		**1.3261**	**1.3885**	**1.4113**	**1.4295**	**1.3299**	**1.3826**	**1.4058**	**1.4236**	**1.3353**	**1.3741**	**1.3979**	**1.4151**

Measurements in mm.



KORALINE Max LKM																	
Length	$t_1/t_2/t_i$ [°C]	Height 500				Height 600				Height 700				Height 800			
		Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230	Width 80	Width 130	Width 180	Width 230
600	**75/65/20**	**271**	**494**	**714**	**979**	**287**	**512**	**739**	**1 014**	**302**	**524**	**757**	**1 039**	**316**	**533**	**770**	**1 056**
	55/45/20	137	246	351	477	144	256	365	496	151	263	375	511	158	269	383	522
700	**75/65/20**	**337**	**630**	**920**	**1 247**	**356**	**652**	**952**	**1 291**	**375**	**667**	**976**	**1 323**	**393**	**679**	**992**	**1 345**
	55/45/20	170	313	452	608	179	326	470	632	188	335	483	650	196	342	494	664
800	**75/65/20**	**402**	**765**	**1 126**	**1 514**	**425**	**791**	**1 165**	**1 568**	**447**	**811**	**1 194**	**1 606**	**469**	**824**	**1 214**	**1 633**
	55/45/20	203	381	553	738	214	396	575	768	224	407	592	790	234	416	604	807
900	**75/65/20**	**467**	**900**	**1 331**	**1 782**	**495**	**931**	**1 378**	**1 845**	**520**	**954**	**1 412**	**1 890**	**545**	**970**	**1 436**	**1 922**
	55/45/20	236	448	655	869	249	466	680	903	261	479	700	929	273	489	715	949
1 000	**75/65/20**	**533**	**1 035**	**1 537**	**2 049**	**564**	**1 071**	**1 591**	**2 122**	**593**	**1 097**	**1 630**	**2 174**	**622**	**1 115**	**1 658**	**2 210**
	55/45/20	269	515	756	999	283	535	785	1 039	297	551	808	1 069	311	562	825	1 092
1 100	**75/65/20**	**598**	**1 170**	**1 743**	**2 317**	**633**	**1 211**	**1 804**	**2 399**	**666**	**1 240**	**1 848**	**2 458**	**698**	**1 261**	**1 880**	**2 499**
	55/45/20	302	582	857	1 129	318	605	891	1 175	334	623	916	1 209	349	636	936	1 234
1 200	**75/65/20**	**664**	**1 305**	**1 949**	**2 585**	**702**	**1 351**	**2 017**	**2 676**	**739**	**1 384**	**2 067**	**2 742**	**774**	**1 407**	**2 102**	**2 787**
	55/45/20	335	650	958	1 260	353	675	996	1 310	370	695	1 024	1 348	387	709	1 046	1 377
1 400	**75/65/20**	**795**	**1 575**	**2 360**	**3 120**	**841**	**1 630**	**2 443**	**3 230**	**885**	**1 670**	**2 503**	**3 309**	**927**	**1 698**	**2 546**	**3 364**
	55/45/20	401	784	1 160	1 521	423	815	1 206	1 581	444	839	1 241	1 627	464	856	1 267	1 662
1 600	**75/65/20**	**926**	**1 845**	**2 772**	**3 655**	**979**	**1 910**	**2 869**	**3 784**	**1 030**	**1 957**	**2 940**	**3 877**	**1 080**	**1 989**	**2 990**	**3 942**
	55/45/20	467	919	1 363	1 782	492	955	1 416	1 853	517	982	1 457	1 906	540	1 003	1 488	1 947
1 800	**75/65/20**	**1 057**	**2 115**	**3 184**	**4 190**	**1 118**	**2 190**	**3 295**	**4 338**	**1 176**	**2 243**	**3 376**	**4 444**	**1 233**	**2 280**	**3 434**	**4 519**
	55/45/20	533	1 053	1 565	2 042	562	1 095	1 626	2 124	590	1 126	1 673	2 186	616	1 150	1 709	2 232
2 000	**75/65/20**	**1 188**	**2 386**	**3 595**	**4 725**	**1 256**	**2 469**	**3 721**	**4 892**	**1 322**	**2 530**	**3 813**	**5 012**	**1 385**	**2 572**	**3 878**	**5 096**
	55/45/20	599	1 187	1 767	2 303	632	1 234	1 837	2 395	663	1 270	1 890	2 465	693	1 297	1 930	2 517
Temperature exponent		**1.3407**	**1.3657**	**1.3900**	**1.4065**	**1.3462**	**1.3573**	**1.3821**	**1.3980**	**1.3516**	**1.3488**	**1.3742**	**1.3895**	**1.3570**	**1.3404**	**1.3662**	**1.3810**

Measurements in mm.

For convector composition see page 41.

ORDER CODE

KORALINE	Natural convection	Type	Length [cm]	Height [cm]	Width [cm]	Convector connection	Heat exchanger colour	Material used	Grille type	Grille colour	Casing colour
L	K	M Max	- ···	/ ··	/ ··	- V counter-flow	1 without colour	S steel	P perforated	0 casing colour	- 10 RAL 9016 ** see colour chart p. 109 99 other RAL colour

Example order code: LKM-140/23/18-V1SP0-10

KORALINE Max free-standing convector, Length 140 cm, Height 23 cm, Width 18 cm, Steel casing white RAL 9016, symmetric safety pencilproof grille in casing colour.

For calculations for other temperature gradients, see p. 81 or visit www.licon.cz

Further information

Assembly and mounting p. 51, Accessories p. 65, Technical data p. 71, Colour chart p. 109

KORALINE Optimal LKO free-standing convector

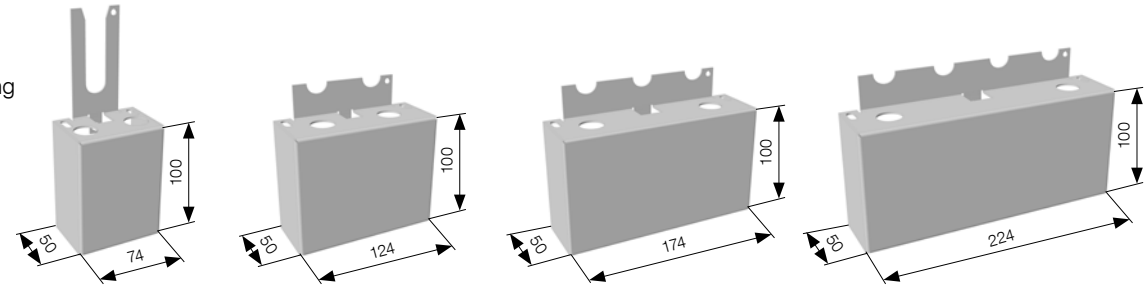
Assembly and mounting

BRACKETS AND MOUNTS

KORALINE free-standing convectors are fitted with floor-level brackets and some higher models also with wall fixing mounts as standard (see the Standard contents list at each model line). Sub-floor brackets and wall brackets are available upon request.

Floor-level brackets

- fitted as standard
- KORALINE free-standing convectors 2,000 mm in length and above are supplied with a central bracket for greater stability



floor-level bracket height 100 mm				
convector width (S)	80	130	180	230

Floor-level bracket heights

Floor-level bracket height above floor level for all KORALINE models is 100 mm.

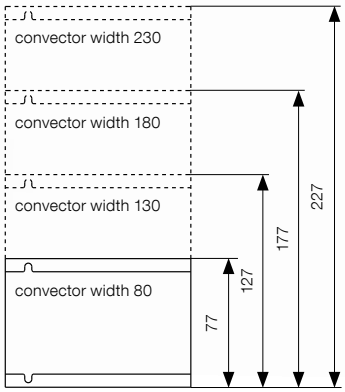
For all widths (S) 80, 130, 180, 230								
Height (V)	**90**	**150**	**230**	**300**	**500**	**600**	**700**	**800**
KORALINE Height inc floor-level bracket (H)	190	250	330	400	600	700	800	900

Floor-level bracket casing

- optional accessory
- floor-level bracket casings are designed to cover connections and the edges of floor-level brackets, and must be ordered in pairs

Floor-level bracket casing dimensions

top view

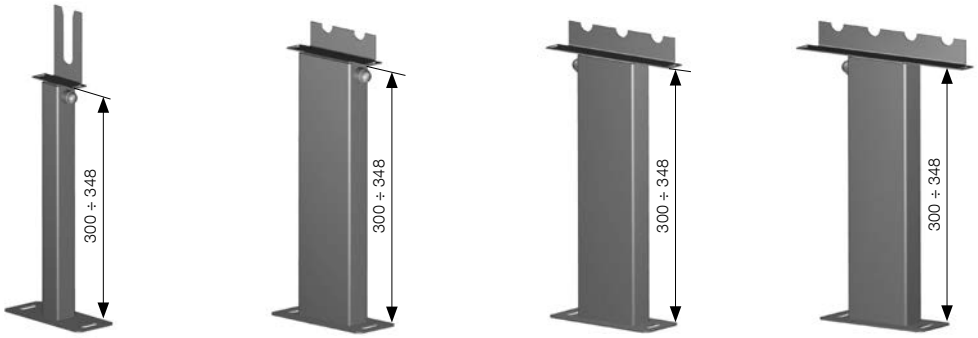


Measurements in mm

Order codes:				
width	80	130	180	230
Optimal, Power, Basic, Combi	LCR-08	LCR-13	LCR-18	LCR-23
Safe, Max	LCR-SM-08	LCR-SM-13	LCR-SM-18	LCR-SM-23

Sub-floor brackets

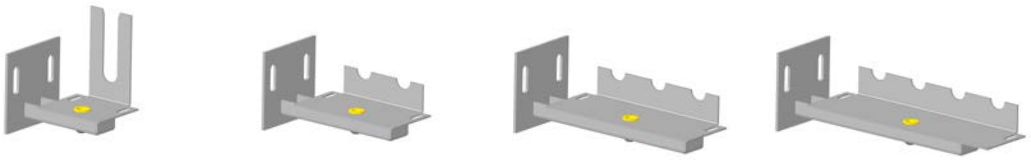
- optional accessory
- convector lengths over 2 000 mm – three brackets for increased stability are needed



Order codes:				
height 300 ÷ 348				
width	80	130	180	230
Optimal, Power, Basic, Combi	LSH-08	LSH-13	LSH-18	LSH-23
Safe, Max	LSH-SM-08	LSH-SM-13	LSH-SM-18	LSH-SM-23

Wall brackets

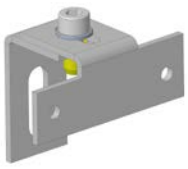
- optional accessory
- when mounting convectors on walls, the distance between the unit and the wall is 25–45 mm
- convector lengths over 2 000 mm – three brackets for increased stability are needed



Order codes:				
width	80	130	180	230
Optimal, Power, Basic, Combi	LKZ-08	LKZ-13	LKZ-18	LKZ-23
Safe, Max	LKZ-SM-08	LKZ-SM-13	LKZ-SM-18	LKZ-SM-23

Wall fixing mounts

- included as standard for higher convectors according to height of the respective model
- When mounting convectors on walls, the distance between the unit and the wall is 25–45 mm



Optimal, Power, Basic and Combi models – from 400 mm in height

Safe and Max models – from 230 mm in height

Order codes:	
Optimal, Power, Basic, Combi	LFS
Safe, Max	LFS-SM

Safe and Max brackets, wall mounts and floor-level bracket casings have different construction and code designations.

ASSEMBLY

Installation instructions – installation procedure (applies to all models)

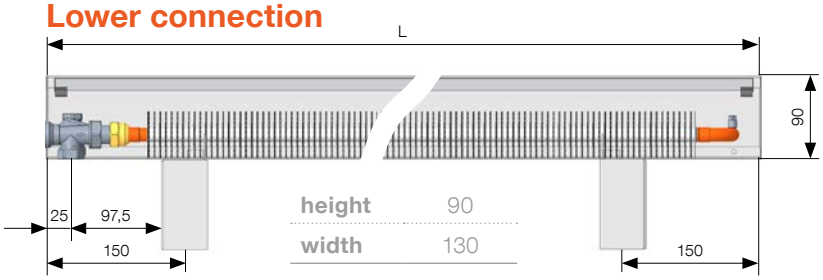
The first step is to measure and screw in the brackets. Floor brackets can be measured out according to the drilling templates included in the package. The heat exchanger is then mounted onto them and connected to the heating system. The heat exchangers must be bled. The last step is to fit the convector casing with the grille and attach it to the brackets. The grilles on Optimal, Power, Safe and Max free-standing convectors are removable for easier cleaning and maintenance. For more detailed information on each KORALINE type, please refer to the installation instructions. The units are supplied assembled, except for the brackets and mounts, valves and extension nipples, if applicable, which are included separately with the product.

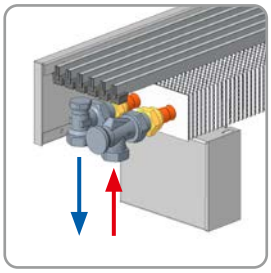
Brackets, mounts and fixing

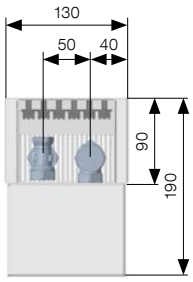
Brackets serve to secure the unit to the floor. Floor-level and sub-floor brackets are available.

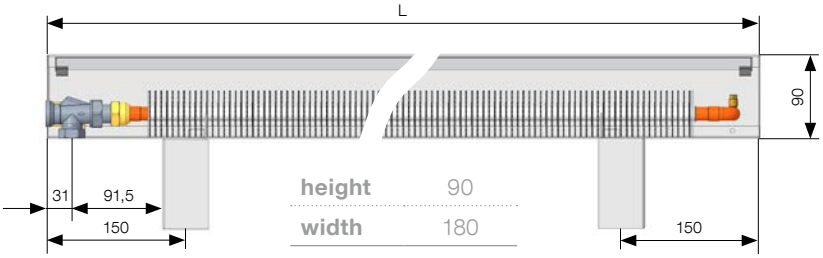
- **Floor-level brackets** are 100 mm above floor level for all KORALINE models and are included as standard.
- **Sub-floor brackets** are optional accessories allowing a height tolerance of approx. 50 mm. For greater stability of KORALINE free-standing convectors, we recommend using 3 brackets for convectors over 2 000 mm in length. The spacing for fastening the brackets to the floor can be found in the illustration on page 55.
- **Wall brackets** are optional accessories serving to secure KORALINE LK units to the wall. We recommend placing them 10 mm above floor-level. They allow a height tolerance of 20 mm and a length tolerance of 10 mm. Spacings are shown in the diagram (see p. 55).
- **Wall fixing mounts** serve to ensure more secure mounting, better stability and consequently higher safety of KORALINE free-standing convectors. They are supplied as standard from a convector height of 400 mm for the Optimal, Power, Basic and Combi models. For the Safe and Max series, due to their strong emphasis on safety, from a convector height of 230 mm. Wall mounts may be ordered for other models if required. For wall fixing mount pictures of wall mounts, see p. 55.

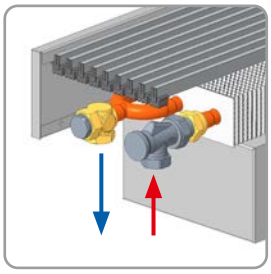
Lower connection

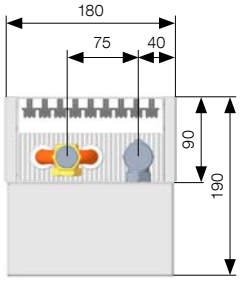


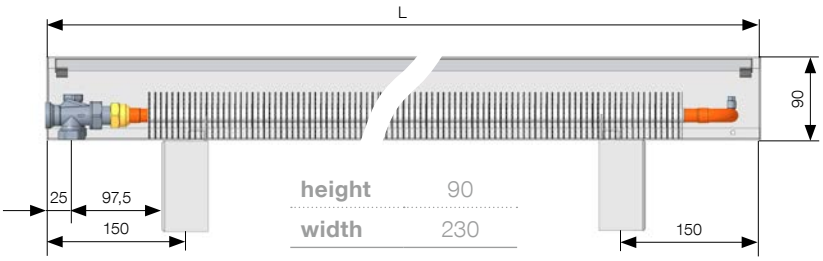


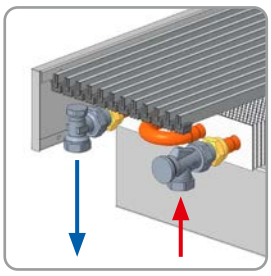


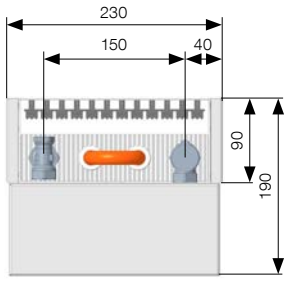


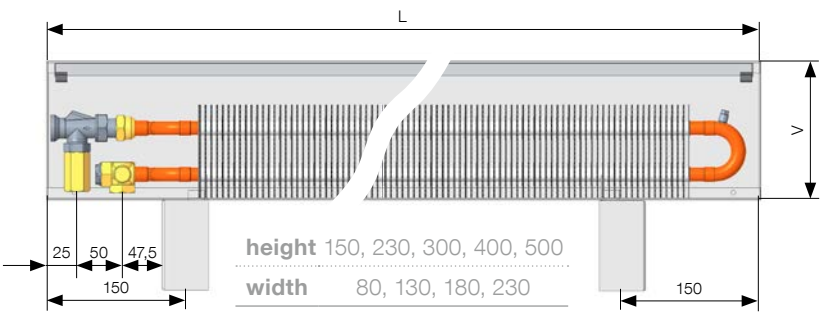


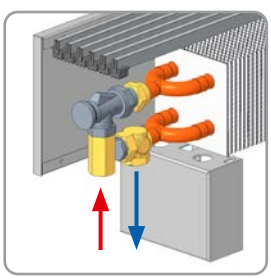


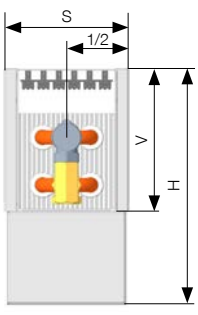


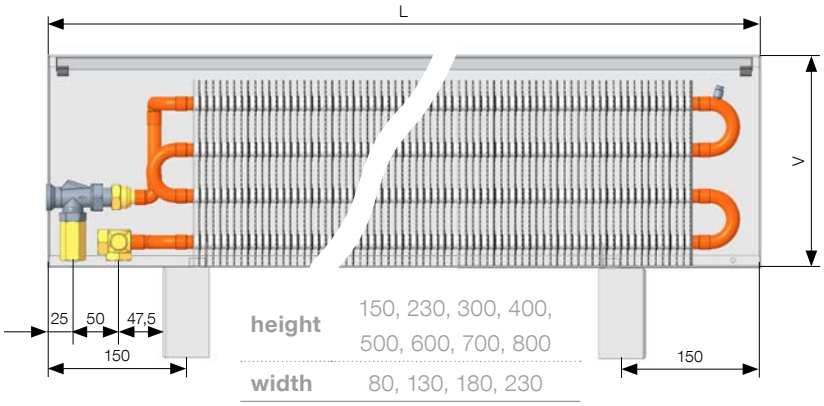


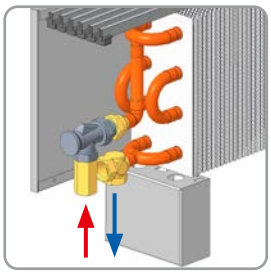


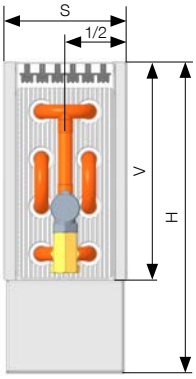








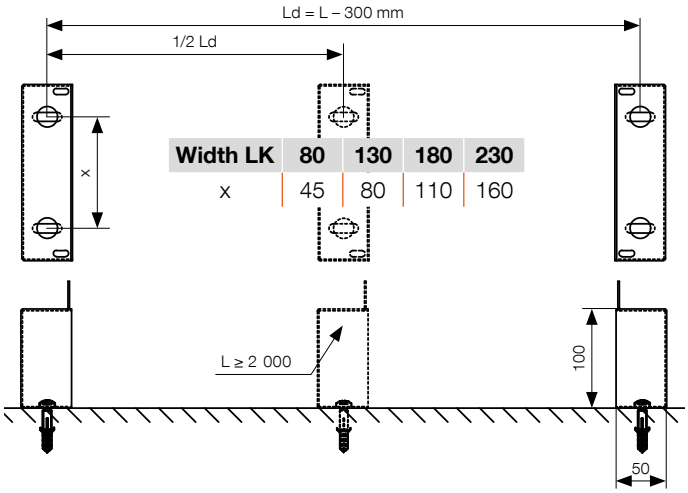




For all widths (S) 80, 130, 180, 230								
Height (V)	90	150	230	300	500	600	700	800
Total height of assembly incl. floor-level brackets (H)	190	250	330	400	600	700	800	900

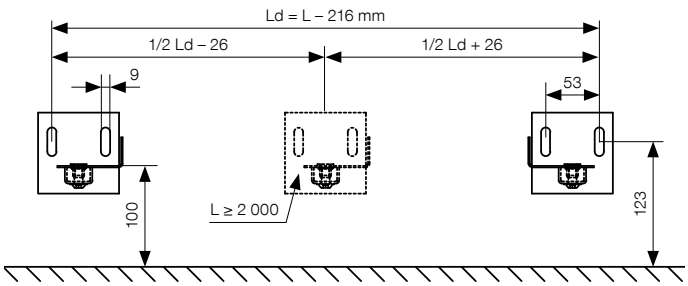
MOUNTING

KORALINE LK free-standing convectors: floor-level mounting

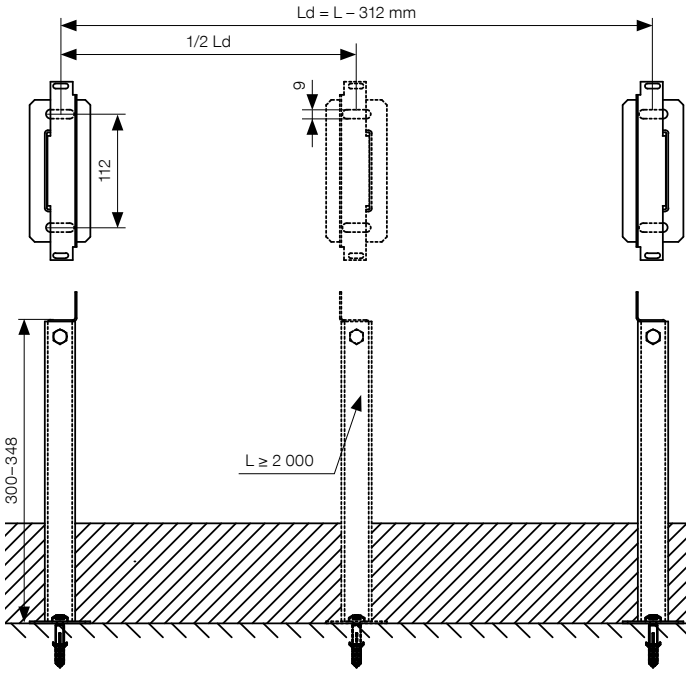


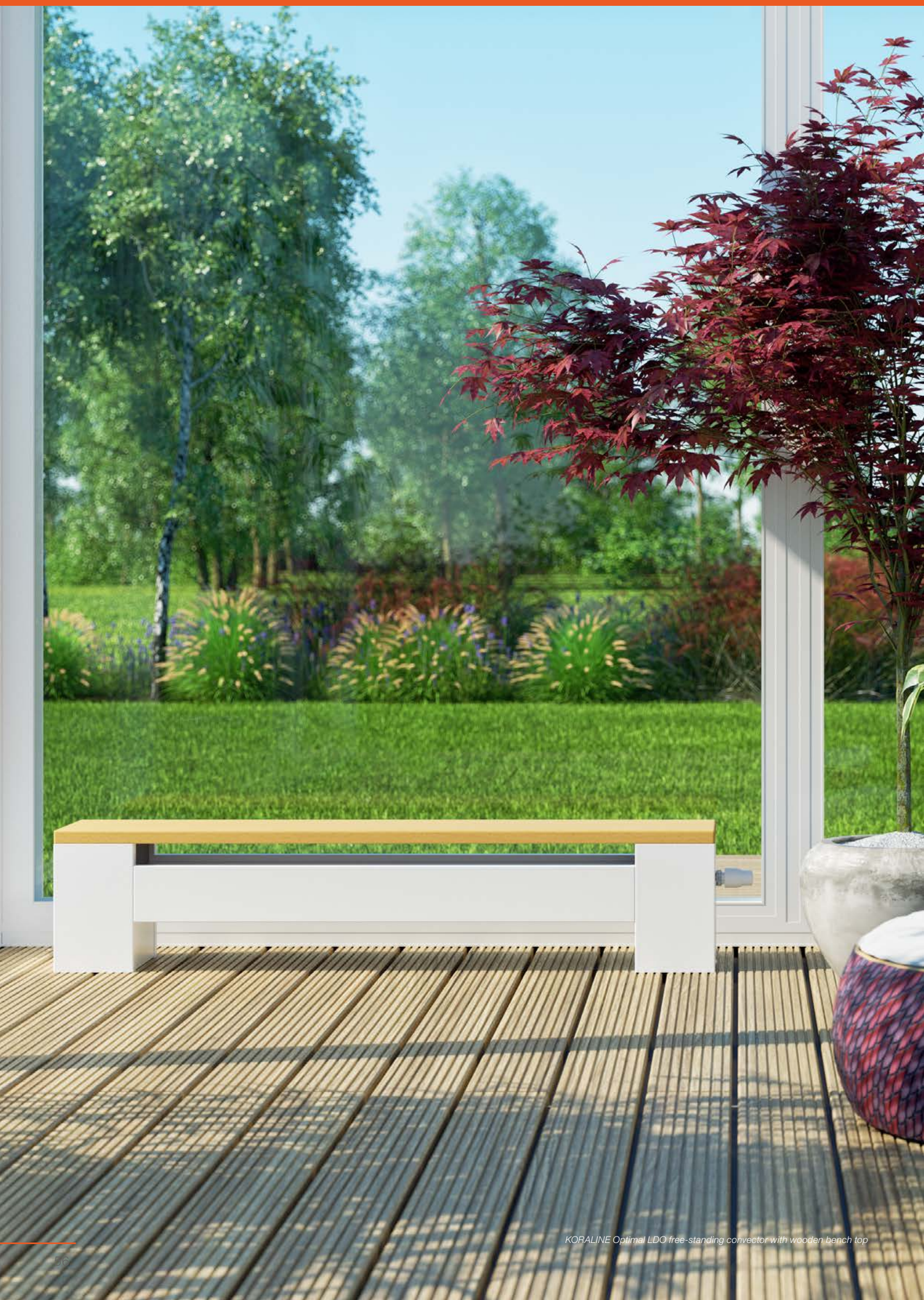
Width LK	80	130	180	230
x	45	80	110	160

KORALINE LK free-standing convectors: wall-mounting



KORALINE LK free-standing convectors: sub-floor level mounting





KORALINE Optimal LDO free-standing convector with wooden bench top

KORALINE Optimal LDO with wooden bench top

Free-standing convectors with natural convection and wooden bench top, for dry environments

KORALINE Pool LDP with wooden bench top

Free-standing convectors with natural convection and wooden bench top, for humid environments

KORALINE Optimal LDO with wooden bench top

Specifications

Unit height inc. bench top	**300, 450 mm**
Unit width inc. bench top	265, 315 mm
Unit length inc. bench top	1 000, 1 200, 1 400, 1 600, 1 800, 2 000 mm
Output	from 721 to 3 525 W
Max. operating pressure	1.2 MPa
Max. operating temperature	110 °C
Max. surface temperature	40 °C
Connecting thread	inner G 1/2"
Connection method	lower (recommended), side
Bench tops	beech, oak, American walnut

KORALINE Optimal LDO free-standing convectors with wooden bench top are exceptional products owing to the timeless design of the casing and the option to choose from several different wooden bench tops. This range combines design with functionality. Convectors with a bench top are suitable for heating interiors, and also for sitting and relaxing. With a proven smart combination of design, output, low surface temperature casing and other features, they are ideal for placement in halls, corridors and conservatories, as well as office buildings and public buildings. Convectors with wooden bench tops are also ideal wherever there are areas with large windows.

Standard contents

- wooden bench top according to preference – oak, beech, American walnut
- galvanized steel RAL 9016 white casing
- Al/Cu low water volume heat exchanger, bleed valve, uniquely shaped fins
- magnetic side cover in casing colour
- axial thermostatic valve, M 30 × 15 thread (see p. 66)
- extension nipple (see p. 66)
- floor-level brackets assembly
- instructions and durable packaging

Optional accessories

- further RAL lacquers for casings available
- black RAL 9005 and further RAL lacquers for Al/Cu heat exchangers available
- elbow or straight lockshield (see p. 68)
- elbow or straight thermostatic valve (see p. 68)
- TEP 230 or TEP 24 thermoelectric actuator (see p. 66)
- SIEMENS RAA21 or RDE 100.1 room thermostat (see p. 68)
- QAA32 room temperature sensor (see p. 94)
- thermostatic head (see p. 67)
- thermostatic head with incorporated control and immersion remote sensor (see p. 67)

BENCH TOPS

Wooden bench tops are made of purely natural materials, treated with an internationally certified oil finish. To maintain their properties and stability, we recommend that bench tops are regularly treated with a similar product.

beech

oak

American walnut

KORALINE Pool LDP with wooden bench top

Specifications

Unit height inc. bench top	**300, 450 mm**
Unit width inc. bench top	265, 315 mm
Unit length inc. bench top	1 000, 1 200, 1 400, 1 600, 1 800, 2 000 mm
Output	from 721 to 3 525 W
Max. operating pressure	1.2 MPa
Max. operating temperature	110 °C
Max. surface temperature	40 °C
Connecting thread	inner G 1/2"
Connection method	lower (recommended), side
Bench tops	American walnut

AISI 316

KORALINE Pool LDP free-standing convectors with wooden bench tops in American walnut are designed specifically for humid environments. The timeless casing design is manufactured from AISI 316 stainless steel and the bench top is treated with an internationally certified oil finish. This model range is especially suited for conservatories, pools and all other humid environments.

For ideal operating conditions and to lengthen the life of the product, we recommend a water pH value of 7.2–7.6 with a maximum chlorine concentration of 1 mg/l. Changes in these values – in particular lower pH values – will result in more aggressive water and corrosion of non-stainless steel components. Convectors with wooden bench top installed in humid environments must be cleaned regularly with clean water and dried thoroughly. Further information can be found in the Installation Manual and Operating and Warranty Conditions, available to download at www.licon.cz.

Standard contents

- wooden bench top – American walnut
- AISI 316 stainless steel RAL 9016 white casing
- Al/Cu low water volume RAL 9005 lacquered heat exchanger, bleed valve, uniquely shaped fins
- magnetic side cover in casing colour
- axial thermostatic valve, thread M 30 × 1.5 (see p. 66)
- extension nipple (see p. 66)
- floor-level brackets assembly
- instructions and durable packaging

Optional accessories

- further RAL lacquers for casings available
- further RAL lacquers for Al/Cu heat exchangers available
- elbow or straight lockshield (see p. 68)
- elbow or straight thermostatic valve (see p. 68)
- TEP 230 or TEP 24 thermoelectric actuator (see p. 66)
- SIEMENS RAA21 or RDE 100.1 room thermostat (see p. 68)
- QAA32 room temperature sensor (see p. 94)
- thermostatic head (see p. 67)
- thermostatic head with incorporated control and immersion remote sensor (see p. 67)

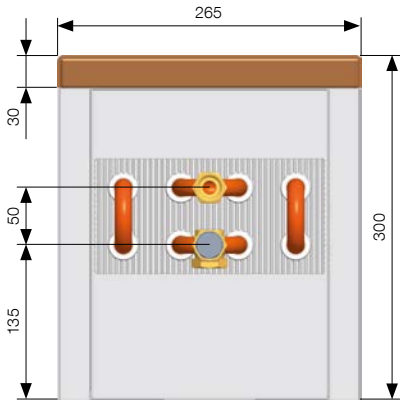
BENCH TOPS

Wooden bench tops are made of purely natural materials, treated with an internationally certified oil finish. To maintain their properties and stability, we recommend that bench tops are regularly treated with a similar product. When using American walnut bench tops in humid environments, we recommend using a protective intermediate layer (e.g. a towel) when sitting.

American walnut

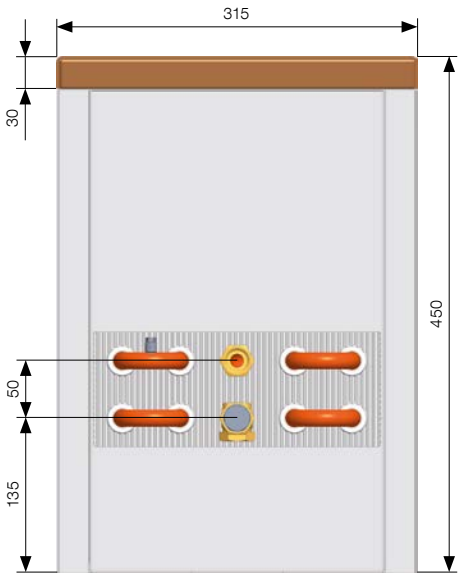
SUMMARY OF TYPES KORALINE Optimal LDO and KORALINE Pool LDP with wooden bench top

WIDTH
265 mm



HEIGHT
300 mm

WIDTH
315 mm



HEIGHT
450 mm

HEAT OUTPUTS

Heat output [W] where $t_1/t_2/t_i$ = 75/65/20 °C (Δt=50), and 55/45/20 °C (Δt=30) / EN 442

KORALINE with wooden bench top			
Length	**$t_1/t_2/t_i$ [°C]**	**Height 300**	**Height 450**
		Width 265	**Width 315**
1 000	**75/65/20**	**721**	**1483**
	55/45/20	348	730
1 200	**75/65/20**	**934**	**1891**
	55/45/20	450	931
1 400	**75/65/20**	**1147**	**2300**
	55/45/20	553	1133
1 600	**75/65/20**	**1360**	**2708**
	55/45/20	656	1334
1 800	**75/65/20**	**1573**	**3117**
	55/45/20	758	1535
2 000	**75/65/20**	**1786**	**3525**
	55/45/20	861	1736
Temperature exponent		**1.4290**	**1.3864**

ORDER CODE

KORALINE	With bench	Type	Lenght [cm]	Height [cm]	Width [cm]	Heat exchanger type	Convector connection	Material used	Bench type	Bench material	Casing colour
L	D	O Optimal	- ···	/ ··	/ ··	- V counter-flow	1 without colour	S steel	B beech D oak O American walnut	1 solid wood	- 10 RAL 9016 ** see colour chart p. 109 99 other RAL colour

Example order code: LDO-140/30/26-V1SB1-10

KORALINE LDO (Optimal) free-standing convector, Length 140 cm, Height 30 cm, Width 26.5 cm, Steel casing white RAL 9016, non-lacquered Al/Cu heat exchanger, Beech bench top.

KORALINE	With bench	Type	Lenght [cm]	Height [cm]	Width [cm]	Heat exchanger type	Convector connection	Material used	Bench type	Bench material	Casing colour
L	D	P Pool	- ···	/ ··	/ ··	- V counter-flow	5 RAL 9005	R stainless steel AISI 316	O American walnut	1 solid wood	- 10 RAL 9016 ** see colour chart p. 109 99 other RAL colour

Example order code: LDP-140/30/26-V5RO1-10

KORALINE LDP free-standing convector (Pool), Length 140 cm, Height 30 cm, Width 26.5 cm, Stainless steel casing white RAL 9016, Al/Cu RAL 9005 lacquered heat exchanger 9005, American walnut bench top.

For calculations for other temperature gradients, see p. 81 or visit www.licon.cz

Further information

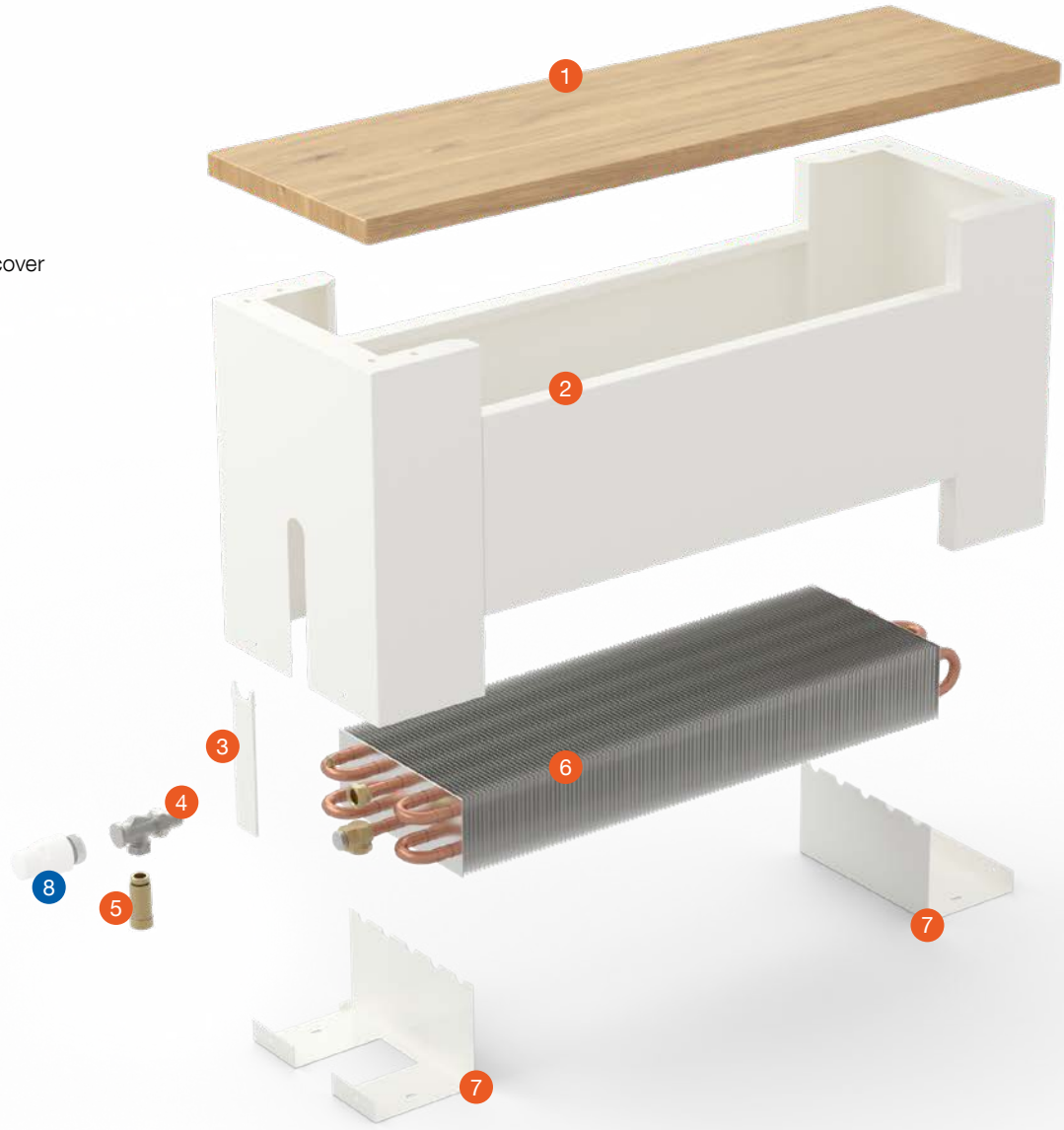
Assembly and mounting p. 62, Accessories p. 65, Technical data p. 71, Colour chart p. 109

KORALINE Optimal LDO with American walnut bench top

Composition of LDO and LDP convectors

1. wooden bench top
2. casing
3. LDO model: magnetic side cover
   LDP model: fixed side cover
4. axial thermostatic valve
5. extension nipple
6. Al/Cu heat exchanger
7. floor-level bracket
8. thermostatic head

● Standard contents
● For KORALINE LDO and LDP model optional accessories see p. 58, 59



ASSEMBLY OF FREE-STANDING CONVECTORS WITH WOODEN BENCH TOP

Installation instructions

We recommend attaching the brackets (see dimensions in the installation instructions) to the floor (see p. 53). Place the heat exchanger on them and connect it. Fit the casing with the bench top and fasten. Please refer to the installation instructions for more detailed information. For correct operation and maximum output, the heating elements must be filled with heating medium and properly bled after installation. After being mounted on the convector, the wooden bench top is secured against unwanted movement by lateral fixing.

Free-standing convectors with wooden bench top for humid environments

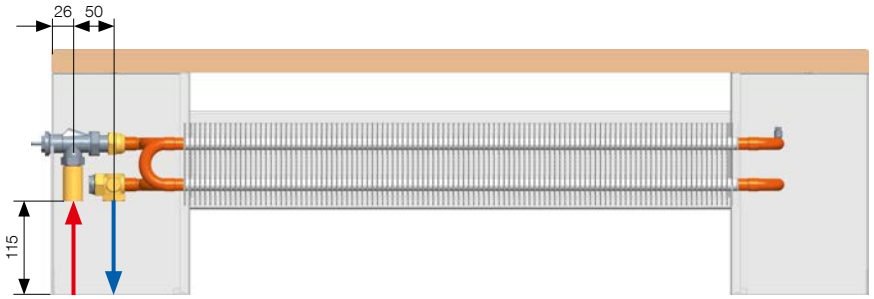
Convectors with wooden bench top installed in humid environments must be cleaned regularly with clean water and dried thoroughly. We recommend the installation of Pool convectors with American walnut bench tops. Bench tops are made from purely natural materials and treated with an internationally certified oil finish. To maintain their properties and stability, we recommend that bench tops are regularly treated with a similar product. When using American walnut bench tops in humid environments, we recommend using a protective intermediate layer (e.g. a towel) when sitting.

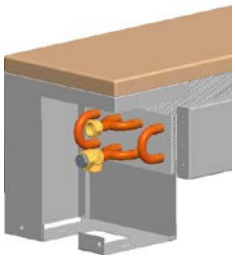
For more detailed guidance and installation instructions for these models, please refer to the installation instructions for KORALINE with wooden bench tops. Bench tops are made of natural materials and therefore slight variations in colour cannot be excluded. The supplier cannot fully guarantee the colours shown nor accept claims due to any variations in colour.

LOWER CONNECTIONS

HEIGHT
300 mm

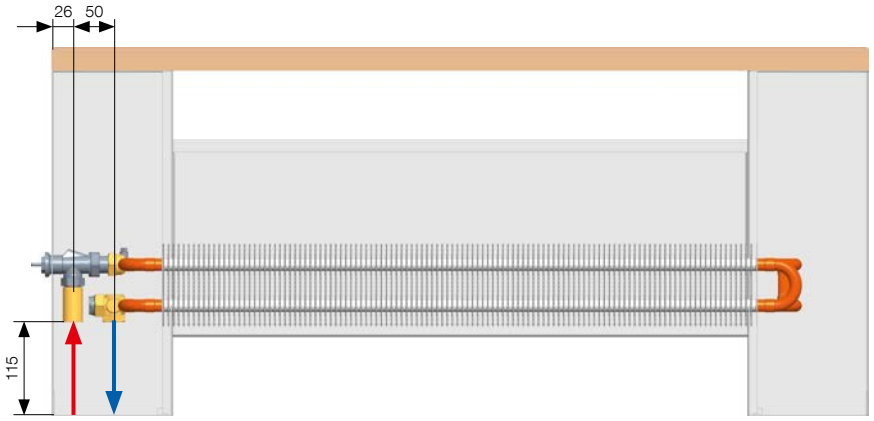
WIDTH
265 mm

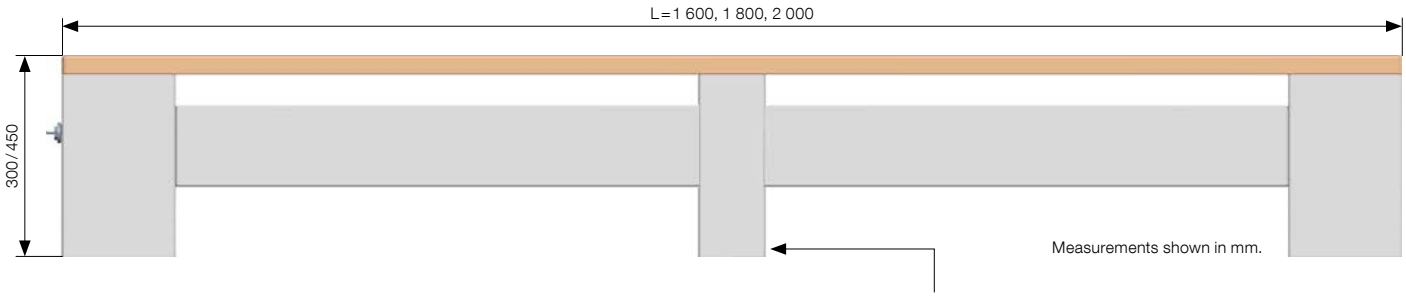




HEIGHT
450 mm

WIDTH
315 mm

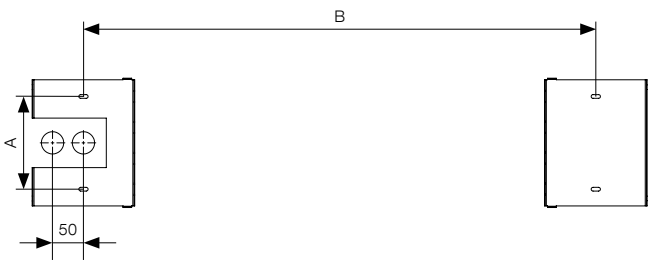




KORALINE free-standing convectors over 1 600 mm in length are supplied with a central leg as standard.

MOUNTING

KORALINE LD free-standing convectors: floor-level mounting



Type	A	B
LDO,P-XXX-30-26	150	L - 170
LDO,P-XXX-45-31	206	L - 150

L = 1 000, 1 200, 1 400, 1 600, 1 800, 2 000 mm

Minimal distance for KORALINE LDO and LDP free-standing convectors from the wall is 100 mm.

KORALINE Basic LKB free-standing convector

KORALINE with natural convection – Accessories

ACCESSORIES

Axial thermostatic valve

● standard contents

- maximum operating pressure: PN 10
- maximum operating temperature: 120 °C
- connection type: M 30 × 1.5
- connection – pipes: 1/2"
- connection – body: 1/2" – O-ring seal
- K_{vs} value: 1.08

The axial thermostatic valve is adapted for the KORALINE product range. The valve is available as an accessory for all KORALINE convectors.

Axial thermostatic valve values

Pre-set	With thermostatic head 2K (m^3/h)	Without thermostatic head K_{vs} (m^3/h)
1	0.063	0.063
2	0.160	0.160
3	0.320	0.350
4	0.470	0.510
5	0.630	0.660
6	0.710	0.810
7	0.730	0.970
8	0.740	1.080

Extension nipple

● standard contents **for units over 150 mm in height**

- length of extension 42.5 mm
- used to align the height between the inlet and outlet of the fitting
- heat exchanger: brass
- connecting thread: inner G 1/2"
- O-ring seal

Thermoelectric actuator

● optional accessory

TEP 230

- power supply: 230 V AC
- power consumption < 2 W
- **order code:**
  REG-TEP230-250 (TEP 230 cable 2.5 m)
  REG-TEP230-500 (TEP 230 cable 5 m)

TEP 24

- power supply: 24 V DC
- power consumption < 2 W
- **order code:**
  REG-TEP24-250 (TEP 24 cable 2.5 m)
  REG-TEP24-500 (TEP 24 cable 5 m)

- IP 44
- reset time: 4 min
- total height 65 mm
- standard installation thread M 30 × 1.5
- cable length 2.5 and 5 m
- closed without voltage

For ambient temperature setting and regulation, convectors must be fitted with thermostatic heads or thermoelectric actuators.

Thermostatic head with incorporated control and immersion remote sensor

- optional accessory
- control range 6.5–28 °C
- wall-mounted
- cable length 5 m
- hysteresis: ≤0.6 °C
- **order code:** REG-TH5

CLASSIC thermostatic head

- optional accessory
- control range 1–28 °C
- hysteresis: 0.4 K
- RAL 9016 white
- connection type: M 30 × 1.5
- **order code:** REG-THC

DESIGN thermostatic head

- optional accessory
- attractive design
- matt finish
- control range 1–28 °C
- hysteresis: 0.25 K
- connection type: M 30 × 1.5
- **order code:** REG-THD

THERA 6 thermostatic head

- optional accessory
- control range 1–28 °C
- hysteresis: 0.4 K
- RAL 9016 white
- connection type: M 30 × 1.5
- **order code:** REG-THC6

KORALINE Optimal LKO free-standing convector

ACCESSORIES

Lockshield

- optional accessory
- elbow or straight
- size ½" G
- nickel-plated brass
- maximum operating pressure PN 10
- maximum operating temperature 90 °C
- **order code:**
  straight lockshield: REG-LS
  elbow lockshield: REG-LA

Pre-sets	1	2	3	4	5	6	7	8	9
revs	1 ¼	1 ½	1 ¾	2	2 ½	3	3 ½	4	Ú.O.
K_v	0.14	0.2	0.31	0.43	0.6	0.79	1	1.2	1.35

K_v flow coefficient (m^3/h)
Ú.O. fully open

Thermostatic valve

- optional accessory
- elbow or straight
- pre-set K_v values
- size ½" G
- connection thread M 30 × 1.5
- nickel-plated brass
- maximum operating pressure PN 10
- maximum operating temperature 90 °C
- **order code:**
  straight lockshield REG-TVS
  elbow lockshield: REG-TVA

Pre-sets	1	2	3	4	5	6
K_v (Δt = 2K)	0.10	0.20	0.30	0.40	0.50	0.60
K_{vs}	0.10	0.20	0.30	0.40	0.57	0.80

K_v flow coefficient (m^3/h)
K_{vs} maximum flow (m^3/h)
Δt = 2K valve proportional band (K)

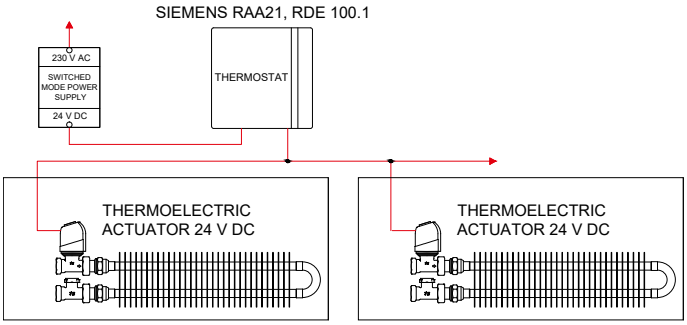
SIEMENS RAA21 room thermostat

- optional accessory
- for heating
- 2 point ON/OFF control
- switching voltage 24 V DC up to 230 V AC
- gas-filled metal membrane
- the required temperature is set manually using the control dial on the front of the thermostat
- the range of adjustable temperatures may be limited mechanically using the pins accessible under the cover
- IP 30
- dimensions (h×w×d) 97×96×35.3 mm
- **order code:** REG-RAA21

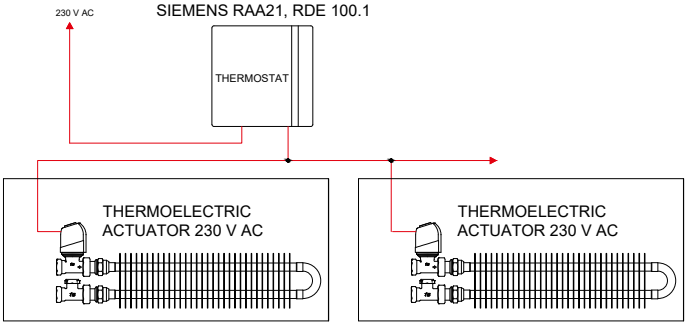
SIEMENS RDE 100.1 room thermostat

- optional accessory
- for heating
- 2 point ON/OFF
- switching voltage 24 V DC and 230 V AC
- operation modes: comfort, low, protective and automatic with timer program
- adjustable configuration and control parameters
- weekly timer program
- battery powered 3 V DC (2× 1.5 V DC)
- IP 30
- dimensions (h×w×d) 127×85×21.5 mm
- **order code:** REG-RDE100.1

24 V DC wiring diagram



230 V AC wiring diagram



For illustrative purposes only. For safety reasons, we recommend the use of 24 V DC thermoelectric actuators.

KORALINE Power LKW free-standing convector

KORALINE Max LKM free-standing convector

Technical data

BASIC TECHNICAL DATA

KORALINE Optimal LKO

Height [mm]	Height 90				Height 150				Height 230			
Width [mm]	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**
Temperature exponent n [-]	-	1.4021	1.3880	1.3752	1.4503	1.3900	1.4204	1.4302	1.4250	1.3958	1.4115	1.4215
Unit weight [kg/m]	-	5.3	6.4	7.7	5.6	6.3	9.0	10.3	7.9	8.1	10.5	11.9
Water volume [l/m]	-	0.298	0.450	0.602	0.298	0.602	0.907	1.211	0.602	0.602	0.907	1.211
Effective part of heat exchanger [mm]	-	L-186	L-174	L-186	L-186	L-234	L-186	L-234	L-186	L-234	L-186	L-234
Height [mm]	Height 300				Height 400				Height 500			
Width [mm]	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**
Temperature exponent n [-]	1.4298	1.4009	1.4038	1.4139	1.4367	1.4081	1.3927	1.4031	1.4436	1.4153	1.3816	1.3923
Unit weight [kg/m]	9.2	9.4	11.8	13.2	11.1	11.3	14.1	15.4	12.9	13.1	16.1	17.4
Water volume [l/m]	0.602	0.602	0.907	1.211	0.602	0.602	0.907	1.211	0.602	0.602	0.907	1.211
Effective part of heat exchanger [mm]	L-186	L-234	L-186	L-234	L-186	L-234	L-186	L-234	L-186	L-234	L-186	L-234

KORALINE Power LKW

Height [mm]	Height 230				Height 300				Height 400			
Width [mm]	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**
Temperature exponent n [-]	1.3261	1.3885	1.4113	1.4295	1.3299	1.3826	1.4058	1.4236	1.3353	1.3741	1.3979	1.4151
Unit weight [kg/m]	7.5	10.1	13.0	15.1	8.8	11.4	14.3	16.4	10.7	13.3	16.3	18.5
Water volume [l/m]	0.602	1.343	2.016	2.692	0.602	1.343	2.016	2.692	0.602	1.343	2.016	2.692
Effective part of heat exchanger [mm]	L-186	L-234	L-253	L-234	L-186	L-234	L-253	L-234	L-186	L-234	L-253	L-234
Height [mm]	Height 500				Height 600							
Width [mm]	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**				
Temperature exponent n [-]	1.3407	1.3657	1.3900	1.4065	1.3462	1.3573	1.3821	1.3980				
Unit weight [kg/m]	12.1	15.2	18.3	20.5	13.8	17.1	20.2	22.5				
Water volume [l/m]	0.602	1.343	2.016	2.692	0.602	1.343	2.016	2.692				
Effective part of heat exchanger [mm]	L-186	L-234	L-253	L-234	L-186	L-234	L-253	L-234				
Height [mm]	Height 700				Height 800							
Width [mm]	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**				
Temperature exponent n [-]	1.3516	1.3488	1.3742	1.3895	1.3570	1.3404	1.3662	1.3810				
Unit weight [kg/m]	15.6	19.0	22.2	24.6	17.3	20.8	24.1	26.6				
Water volume [l/m]	0.602	1.343	2.016	2.692	0.602	1.343	2.016	2.692				
Effective part of heat exchanger [mm]	L-186	L-234	L-253	L-234	L-186	L-234	L-253	L-234				

KORALINE Basic LKB

Height [mm]	Height 90				Height 150				Height 230			
Width [mm]	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**
Temperature exponent n [-]	-	1.4021	1.3880	1.3752	-	1.3900	1.4204	1.4302	-	1.3958	1.4115	1.4215
Unit weight [kg/m]	-	4.9	5.9	6.9	-	6.2	8.6	9.9	-	7.9	10.4	11.7
Water volume [l/m]	-	0.298	0.450	0.602	-	0.602	0.907	1.211	-	0.602	0.907	1.211
Effective part of heat exchanger [mm]	-	L-186	L-174	L-186	-	L-234	L-186	L-234	-	L-234	L-186	L-234
Height [mm]	Height 300				Height 400				Height 500			
Width [mm]	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**
Temperature exponent n [-]	-	1.4009	1.4038	1.4139	-	1.4081	1.3927	1.4031	-	1.4153	1.3816	1.3923
Unit weight [kg/m]	-	9.4	11.9	13.3	-	11.5	14.1	15.5	-	13.6	16.4	17.8
Water volume [l/m]	-	0.602	0.907	1.211	-	0.602	0.907	1.211	-	0.602	0.907	1.211
Effective part of heat exchanger [mm]	-	L-234	L-186	L-234	-	L-234	L-186	L-234	-	L-234	L-186	L-234

KORALINE Combi LKC

Height [mm]	Height 230			Height 300			Height 400			Height 500		
Width [mm]	**Width 130**	**Width 180**	**Width 230**	**Width 130**	**Width 180**	**Width 230**	**Width 130**	**Width 180**	**Width 230**	**Width 130**	**Width 180**	**Width 230**
Temperature exponent n [-]	1.3885	1.4113	1.4295	1.3826	1.4058	1.4236	1.3741	1.3979	1.4151	1.3657	1.3900	1.4065
Unit weight [kg/m]	10.1	12.9	14.6	11.7	14.4	16.2	13.8	16.6	18.4	15.9	18.8	20.7
Water volume [l/m]	1.343	2.016	2.692	1.343	2.016	2.692	1.343	2.016	2.692	1.343	2.016	2.692
Effective part of heat exchanger [mm]	L-234	L-253	L-234	L-234	L-253	L-234	L-234	L-253	L-234	L-234	L-253	L-234

KORALINE Safe LKS

Height [mm]	Height 90				Height 150				Height 230			
Width [mm]	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**
Temperature exponent n [-]	-	1.4021	1.3880	1.3752	1.4503	1.3900	1.4204	1.4302	1.4250	1.3958	1.4115	1.4215
Unit weight [kg/m]	-	6.6	7.6	8.8	7.5	8.1	10.6	11.9	10.4	10.9	12.8	14.1
Water volume [l/m]	-	0.298	0.450	0.602	0.298	0.602	0.907	1.211	0.602	0.602	0.907	1.211
Effective part of heat exchanger [mm]	-	L-234	L-186	L-234	L-186	L-234	L-186	L-234	L-186	L-234	L-186	L-234
Height [mm]	Height 300				Height 400				Height 500			
Width [mm]	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**
Temperature exponent n [-]	1.4298	1.4009	1.4038	1.4139	1.4367	1.4081	1.3927	1.4031	1.4436	1.4153	1.3816	1.3923
Unit weight [kg/m]	12.2	12.7	14.7	16.0	15.0	15.5	17.7	19.0	17.6	18.1	20.4	21.8
Water volume [l/m]	0.602	0.602	0.907	1.211	0.602	0.602	0.907	1.211	0.602	0.602	0.907	1.211
Effective part of heat exchanger [mm]	L-186	L-234	L-186	L-234	L-186	L-234	L-186	L-234	L-186	L-234	L-186	L-234

BASIC TECHNICAL DATA

KORALINE Max LKM												
Height [mm]	Height 230				Height 300				Height 400			
Width [mm]	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**
Temperature exponent n [-]	1.3261	1.3885	1.4113	1.4295	1.3299	1.3826	1.4058	1.4236	1.3353	1.3741	1.3979	1.4151
Unit weight [kg/m]	10.2	12.5	15.3	17.3	12.0	14.4	17.2	19.2	14.8	17.3	20.2	22.3
Water volume [l/m]	0.602	1.343	2.016	2.692	0.602	1.343	2.016	2.692	0.602	1.343	2.016	2.692
Effective part of heat exchanger [mm]	L-186	L-234	L-253	L-234	L-186	L-234	L-253	L-234	L-186	L-234	L-253	L-234
Height [mm]	Height 500				Height 600							
Width [mm]	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**				
Temperature exponent n [-]	1.3407	1.3657	1.3900	1.4065	1.3462	1.3573	1.3821	1.3980				
Unit weight [kg/m]	17.4	20.0	23.0	25.1	20.0	22.7	25.8	28.0				
Water volume [l/m]	0.602	1.343	2.016	2.692	0.602	1.343	2.016	2.692				
Effective part of heat exchanger [mm]	L-186	L-234	L-253	L-234	L-186	L-234	L-253	L-234				
Height [mm]	Height 700				Height 800							
Width [mm]	**Width 80**	**Width 130**	**Width 180**	**Width 230**	**Width 80**	**Width 130**	**Width 180**	**Width 230**				
Temperature exponent n [-]	1.3516	1.3488	1.3742	1.3895	1.3570	1.3404	1.3662	1.3810				
Unit weight [kg/m]	22.7	25.4	28.6	30.9	25.3	28.1	31.3	33.8				
Water volume [l/m]	0.602	1.343	2.016	2.692	0.602	1.343	2.016	2.692				
Effective part of heat exchanger [mm]	L-186	L-234	L-253	L-234	L-186	L-234	L-253	L-234				

KORALINE LD		
Height [mm]	Height 300	Height 450
Width [mm]	**Width 265**	**Width 315**
Temperature exponent n [-]	1.4290	1.3864
Unit weight [kg/m]	16.6	22.3
Water volume [l/m]	1.122	1.451
Effective part of heat exchanger [mm]	L-323	L-274

KORALINE CONVECTOR PRESSURE LOSSES

(Height/Width)

Optimal LKO 9/13, 15/08, Basic LKB 9/13, Safe LKS 9/13, 15/08

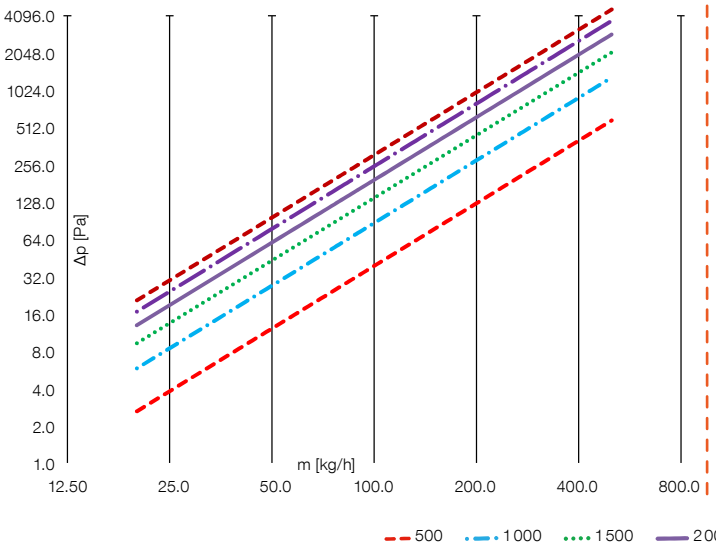
Length L [mm]	Mass flow rate m [kg/h]											
	20	40	80	100	150	200	250	300	350	400	450	500
	Heat exchanger pressure losses Δp [Pa]											
600	3	10	33	48	95	155	225	306	396	496	605	722
800	5	14	46	67	133	216	314	426	552	691	842	1005
1000	6	19	60	87	172	279	406	551	714	893	1089	1300
1200	7	23	74	107	212	344	500	680	881	1102	1343	1604
1400	9	27	88	128	253	411	598	812	1052	1316	1604	1915
1600	10	32	103	149	295	479	697	947	1226	1535	1871	2233
1800	11	37	118	171	338	549	798	1084	1405	1758	2143	2558
2000	13	41	133	193	382	619	901	1224	1586	1985	2419	2887
2200	14	46	148	216	426	691	1005	1366	1770	2215	2700	3222
2400	16	51	164	238	471	764	1111	1510	1956	2448	2984	3562
2600	17	56	180	261	517	838	1219	1656	2145	2685	3272	3906
2800	19	61	196	285	563	912	1327	1803	2336	2924	3564	4254
3000	21	66	212	308	609	988	1437	1952	2529	3165	3858	4605

(Height/Width)

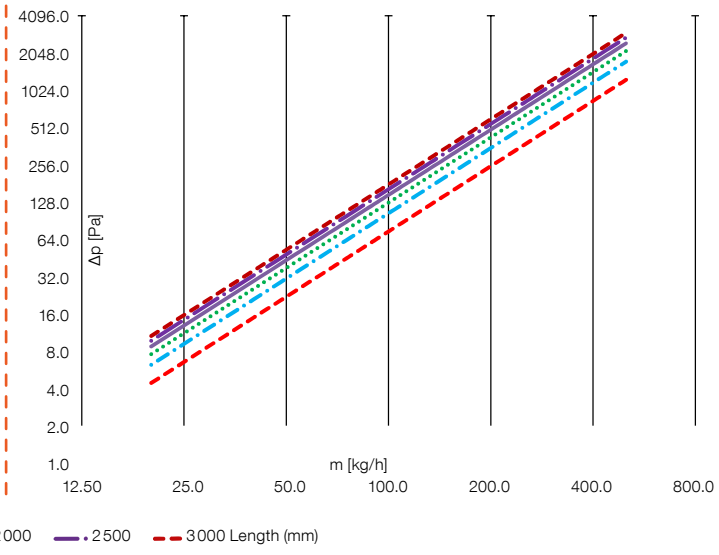
Optimal LKO 9/18, Basic LKB 9/18, Safe LKS 9/18

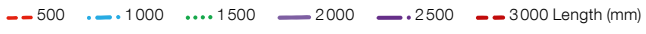
Length L [mm]	Mass flow rate m [kg/h]											
	20	40	80	100	150	200	250	300	350	400	450	500
	Heat exchanger pressure losses Δp [Pa]											
600	5	16	55	81	165	274	404	556	729	921	1132	1361
800	6	19	63	93	190	315	465	640	839	1060	1302	1566
1000	6	21	71	104	212	351	519	714	935	1181	1452	1746
1200	7	23	77	114	232	384	567	780	1022	1291	1587	1909
1400	7	25	83	123	250	413	611	841	1102	1392	1711	2058
1600	8	26	89	131	267	441	652	898	1176	1486	1826	2196
1800	8	28	94	139	282	467	691	951	1246	1574	1934	2326
2000	9	29	99	146	297	492	727	1001	1311	1657	2036	2449
2200	9	31	104	153	311	515	762	1049	1374	1736	2133	2566
2400	10	32	108	160	325	538	795	1094	1433	1811	2226	2677
2600	10	33	112	166	338	559	827	1138	1490	1883	2314	2783
2800	10	35	117	172	350	580	857	1180	1545	1952	2400	2886
3000	11	36	120	178	362	600	886	1220	1598	2019	2482	2985

Optimal LKO 9/13, 15/08,
Basic LKB 9/13, Safe LKS 9/13, 15/08



Optimal LKO 9/18,
Basic LKB 9/18, Safe LKS 9/18





KORALINE CONVECTOR PRESSURE LOSSES

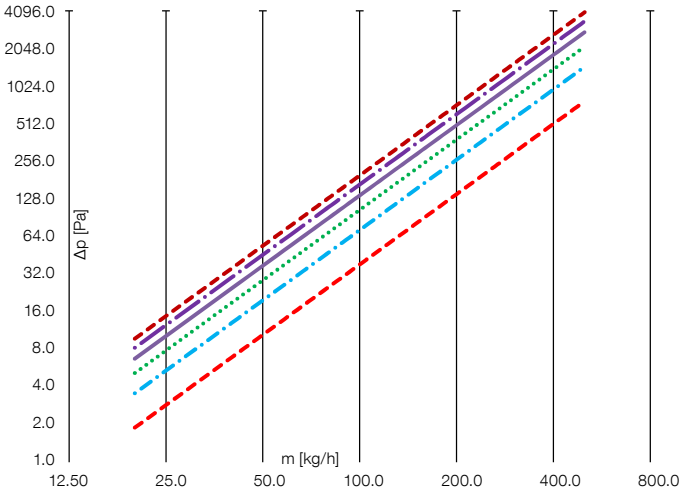
(Height/Width) **Optimal LKO 23/08, 30/08, 40/08, 50/08, 9/23, Basic LKB 9/23, Power LKW 23/08, 30/08, 40/08, 50/08, 60/08, 70/08, 80/08, Max LKM 23/08, 30/08, 40/08, 50/08, 60/08, 70/08, 80/08, Safe LKS 23/08, 30/08, 40/08, 50/08, 9/23**

Length L [mm]	Mass flow rate m [kg/h]											
	20	**40**	**80**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
	Heat exchanger pressure losses Δp [Pa]											
600	8	27	90	132	264	432	633	866	1127	1417	1733	2076
800	11	35	115	168	336	550	806	1102	1435	1803	2206	2643
1000	13	42	138	202	405	663	972	1329	1730	2175	2661	3187
1200	15	49	161	236	472	773	1133	1548	2016	2534	3100	3713
1400	17	56	183	268	538	880	1289	1762	2294	2884	3528	4226
1600	19	63	205	300	601	984	1442	1971	2566	3226	3947	4727
1800	21	69	226	331	664	1086	1592	2175	2833	3561	4356	5218
2000	23	75	247	362	725	1187	1739	2376	3094	3890	4759	5700
2200	25	82	268	392	785	1286	1884	2574	3352	4213	5155	6175
2400	27	88	288	422	845	1383	2027	2769	3606	4532	5546	6642
2600	29	94	308	451	904	1479	2167	2962	3856	4847	5931	7103
2800	31	100	328	480	962	1574	2306	3152	4104	5158	6311	7559
3000	32	106	347	509	1019	1668	2444	3339	4348	5466	6687	8010

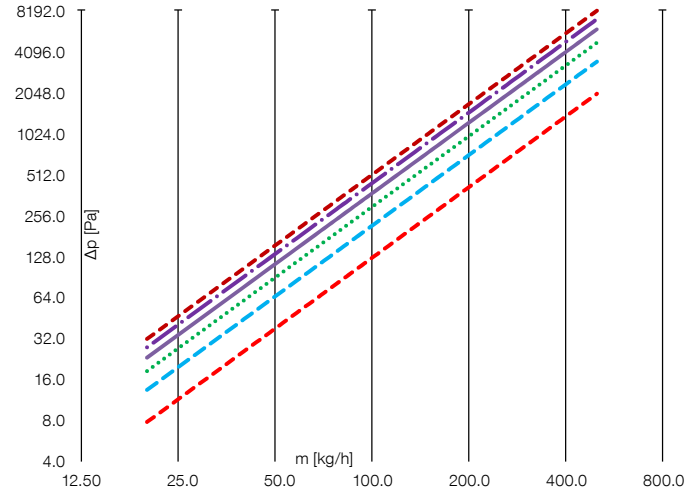
(Height/Width) **Optimal LKO 15/13, 23/13, 30/13, 40/13, 50/13, Basic LKB 15/13, 23/13, 30/13, 40/13, 50/13, Safe LKS 15/13, 23/13, 30/13, 40/13, 50/13**

Length L [mm]	Mass flow rate m [kg/h]											
	20	**40**	**80**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
	Heat exchanger pressure losses Δp [Pa]											
600	9	30	98	144	290	475	698	956	1246	1568	1921	2303
800	11	37	123	180	363	595	874	1197	1561	1964	2406	2885
1000	13	44	146	215	432	709	1041	1425	1859	2339	2865	3436
1200	16	51	169	248	498	818	1201	1644	2144	2698	3305	3963
1400	17	58	190	280	562	923	1355	1855	2419	3044	3729	4471
1600	19	64	211	311	624	1024	1505	2059	2686	3380	4140	4964
1800	21	70	232	341	685	1123	1650	2258	2945	3707	4540	5443
2000	23	76	252	370	743	1220	1792	2453	3198	4025	4930	5911
2200	25	82	271	398	801	1315	1931	2643	3446	4337	5312	6369
2400	27	88	290	427	857	1407	2067	2829	3689	4643	5687	6818
2600	28	94	309	454	913	1498	2200	3012	3928	4943	6055	7259
2800	30	99	328	481	967	1588	2332	3192	4162	5238	6416	7693
3000	32	105	346	508	1021	1676	2461	3369	4393	5529	6773	8120

Optimal LKO 23/08, 30/08, 40/08, 50/08, 9/23, Basic LKB 9/23, Safe LKS 23/08, 30/08, 40/08, 50/08, 9/23, Power LKW 23/08, 30/08, 40/08, 50/08, 60/08, 70/08, 80/08, Max LKM 23/08, 30/08, 40/08, 50/08, 60/08, 70/08, 80/08



Optimal LKO 15/13, 23/13, 30/13, 40/13, 50/13, Basic LKB 15/13, 23/13, 30/13, 40/13, 50/13, Safe LKS 15/13, 23/13, 30/13, 40/13, 50/13



500 1000 1500 2000 2500 3000 Length (mm)

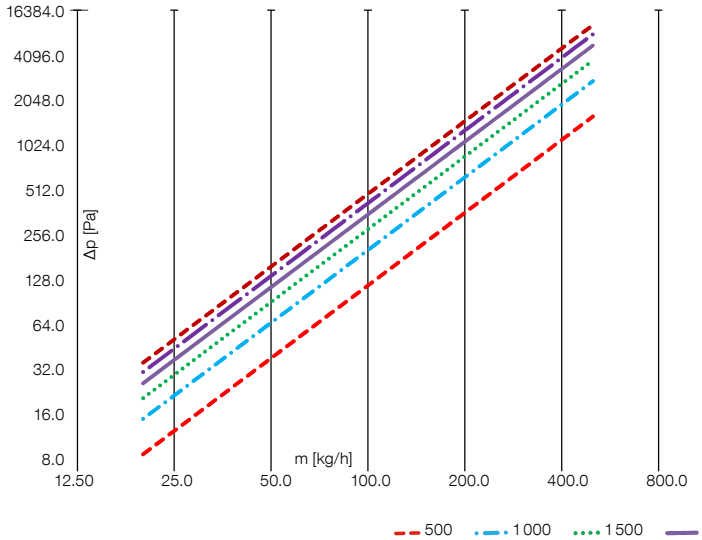
(Height/Width) **Optimal LKO 15/18, 23/18, 30/18, 40/18, 50/18, Basic LKB 15/18, 23/18, 30/18, 40/18, 50/18, Safe LKS 15/18, 23/18, 30/18, 40/18, 50/18**

Length L [mm]	Mass flow rate m [kg/h]											
	20	40	80	100	150	200	250	300	350	400	450	500
	Heat exchanger pressure losses Δp [Pa]											
600	12	41	137	202	408	673	991	1360	1777	2240	2748	3299
800	16	53	175	258	521	858	1264	1734	2266	2856	3504	4207
1000	19	63	211	311	629	1036	1526	2094	2736	3449	4231	5080
1200	22	74	246	363	734	1208	1780	2442	3191	4023	4936	5926
1400	25	84	281	413	836	1377	2027	2782	3635	4583	5622	6750
1600	28	94	314	463	935	1541	2270	3114	4069	5130	6293	7556
1800	31	104	347	511	1033	1702	2507	3440	4495	5667	6952	8346
2000	34	114	379	559	1129	1861	2740	3760	4913	6194	7599	9123
2200	37	124	411	606	1224	2017	2970	4075	5325	6714	8236	9888
2400	40	133	443	652	1317	2170	3197	4386	5731	7226	8864	10642
2600	43	142	474	697	1410	2322	3420	4693	6132	7731	9484	11387
2800	45	151	504	743	1501	2472	3641	4996	6528	8231	10097	12122
3000	48	161	534	787	1591	2621	3860	5296	6920	8725	10703	12850

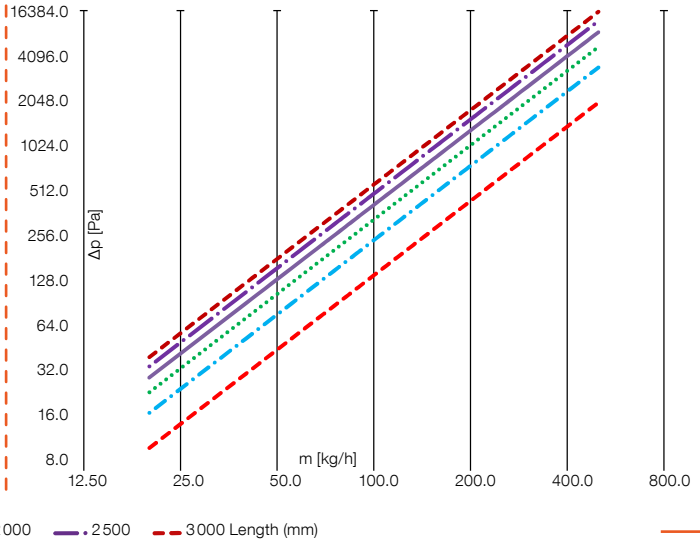
(Height/Width) **Optimal LKO 15/23, 23/23, 30/23, 40/23, 50/23, Basic LKB 15/23, 23/23, 30/23, 40/23, 50/23, Safe LKS 15/23, 23/23, 30/23, 40/23, 50/23**

Length L [mm]	Mass flow rate m [kg/h]											
	20	40	80	100	150	200	250	300	350	400	450	500
	Heat exchanger pressure losses Δp [Pa]											
600	18	58	191	279	559	915	1341	1832	2385	2997	3667	4391
800	22	73	241	352	706	1155	1692	2311	3009	3782	4627	5541
1000	27	88	288	422	845	1383	2026	2768	3604	4530	5542	6637
1200	31	102	334	489	979	1602	2348	3208	4177	5249	6422	7692
1400	35	115	378	554	1109	1815	2660	3634	4731	5946	7275	8713
1600	39	129	421	617	1236	2022	2963	4048	5271	6624	8104	9706
1800	43	141	463	679	1359	2224	3259	4453	5797	7286	8914	10676
2000	47	154	505	739	1480	2422	3549	4849	6313	7934	9707	11625
2200	51	166	545	799	1599	2616	3833	5237	6819	8570	10484	12556
2400	54	179	585	857	1715	2807	4112	5619	7316	9194	11248	13472
2600	58	190	624	914	1830	2994	4387	5995	7805	9809	12000	14372
2800	62	202	662	971	1943	3179	4658	6365	8287	10415	12742	15260
3000	65	214	700	1026	2054	3362	4926	6730	8762	11012	13473	16135

Optimal LKO 15/18, 23/18, 30/18, 40/18, 50/18, Basic LKB 15/18, 23/18, 30/18, 40/18, 50/18, Safe LKS 15/18, 23/18, 30/18, 40/18, 50/18



Optimal LKO 15/23, 23/23, 30/23, 40/23, 50/23, Basic LKB 15/23, 23/23, 30/23, 40/23, 50/23, Safe LKS 15/23, 23/23, 30/23, 40/23, 50/23



500 1000 1500 2000 2500 3000 Length (mm)

KORALINE CONVECTOR PRESSURE LOSSES

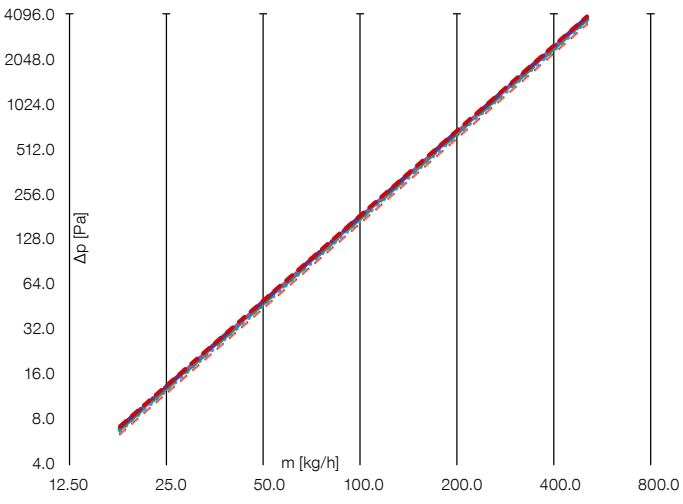
(Height/Width) **Power LKW 23/13, 30/13, 40/13, 50/13, 60/13, 70/13, 80/13,**
Combi LKC 23/13, 30/13, 40/13, 50/13, Max LKM 23/13, 30/13, 40/13, 50/13, 60/13, 70/13, 80/13

Length L [mm]	Mass flow rate m [kg/h]											
	20	**40**	**80**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
	Heat exchanger pressure losses Δp [Pa]											
600	9	32	115	175	374	641	972	1368	1825	2342	2920	3556
800	9	32	118	179	381	653	991	1394	1860	2388	2977	3625
1000	9	33	119	181	387	663	1006	1415	1888	2424	3022	3680
1200	9	33	121	184	392	671	1019	1433	1912	2454	3059	3725
1400	9	33	122	185	396	678	1029	1448	1932	2480	3091	3764
1600	9	34	123	187	400	684	1039	1461	1949	2502	3119	3798
1800	9	34	124	189	403	690	1047	1472	1964	2522	3143	3828
2000	9	34	125	190	406	695	1054	1483	1978	2540	3166	3855
2200	9	34	126	191	408	699	1061	1492	1991	2556	3186	3880
2400	9	35	127	192	411	703	1067	1501	2003	2571	3205	3903
2600	10	35	127	193	413	707	1073	1509	2014	2585	3222	3924
2800	10	35	128	194	415	711	1079	1517	2024	2598	3238	3943
3000	10	35	129	195	417	714	1084	1524	2033	2610	3253	3962

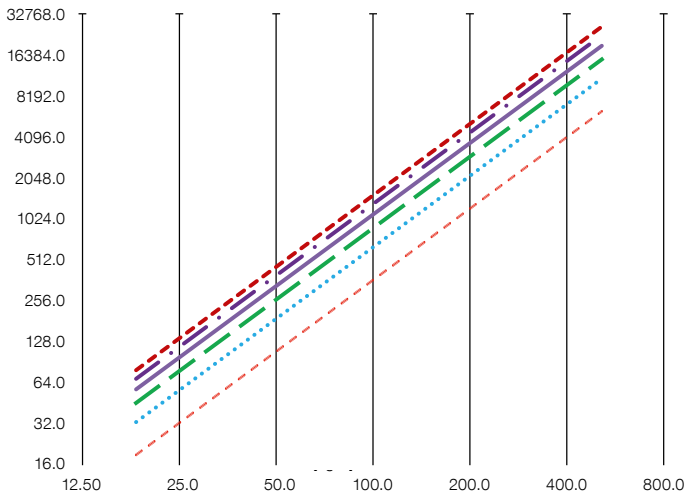
(Height/Width) **Power LKW 23/18, 30/18, 40/18, 50/18, 60/18, 70/18, 80/18,**
Combi LKC 23/18, 30/18, 40/18, 50/18, Max LKM 23/18, 30/18, 40/18, 50/18, 60/18, 70/18, 80/18

Length L [mm]	Mass flow rate m [kg/h]											
	20	**40**	**80**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
	Heat exchanger pressure losses Δp [Pa]											
600	27	89	295	435	879	1449	2134	2929	3828	4826	5921	7110
800	33	111	371	547	1106	1822	2683	3682	4812	6067	7444	8938
1000	40	133	443	653	1320	2175	3204	4398	5747	7246	8890	10674
1200	46	154	513	755	1526	2515	3705	5084	6644	8377	10277	12339
1400	52	174	579	854	1725	2843	4188	5747	7510	9469	11618	13949
1600	58	193	644	949	1919	3162	4657	6391	8352	10531	12920	15512
1800	64	212	708	1042	2107	3472	5115	7019	9172	11565	14189	17036
2000	69	231	770	1134	2291	3776	5562	7632	9974	12576	15429	18525
2200	75	249	830	1223	2472	4073	6000	8234	10760	13567	16644	19984
2400	80	267	890	1310	2649	4365	6430	8824	11531	14539	17837	21417
2600	85	285	948	1397	2823	4652	6853	9404	12289	15495	19010	22825
2800	91	302	1006	1481	2995	4934	7269	9975	13035	16435	20164	24211
3000	96	319	1062	1565	3164	5213	7679	10537	13770	17363	21301	25576

Power LKW 23/13, 30/13, 40/13, 50/13, 60/13, 70/13, 80/13,
Combi LKC 23/13, 30/13, 40/13, 50/13,
Max LKM 23/13, 30/13, 40/13, 50/13, 60/13, 70/13, 80/13



Power LKW 23/18, 30/18, 40/18, 50/18, 60/18, 70/18, 80/18,
Combi LKC 23/18, 30/18, 40/18, 50/18,
Max LKM 23/18, 30/18, 40/18, 50/18, 60/18, 70/18, 80/18

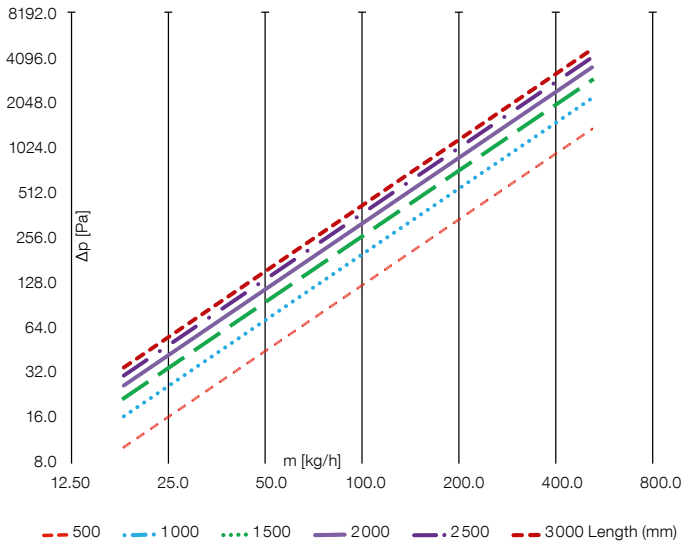


500 1000 1500 2000 2500 3000 Length (mm)

(Height/Width) **Power LKW 23/23, 30/23, 40/23, 50/13, 60/23, 70/23, 80/23,**
Combi LKC 23/23, 30/23, 40/23, 50/23, Max LKM 23/23, 30/23, 40/23, 50/23, 60/23, 70/23, 80/23

Length L [mm]	Mass flow rate m [kg/h]											
	20	**40**	**80**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
	Heat exchanger pressure losses Δp [Pa]											
600	13	37	104	145	263	402	559	732	919	1119	1331	1556
800	16	46	127	176	321	490	681	892	1120	1364	1623	1896
1000	19	53	148	205	374	571	794	1040	1306	1590	1892	2210
1200	22	60	167	233	424	648	901	1179	1480	1802	2145	2506
1400	24	67	186	259	471	720	1001	1311	1645	2004	2385	2786
1600	26	73	204	284	516	790	1098	1437	1804	2197	2614	3054
1800	29	80	221	308	560	856	1190	1558	1956	2382	2835	3312
2000	31	86	238	331	602	920	1280	1675	2103	2561	3048	3561
2200	33	91	254	353	643	983	1366	1788	2245	2735	3254	3802
2400	35	97	270	375	682	1043	1451	1899	2384	2903	3455	4036
2600	37	102	285	396	721	1103	1533	2006	2519	3068	3650	4265
2800	39	108	300	417	759	1160	1613	2111	2651	3228	3841	4488
3000	41	113	315	437	796	1217	1691	2214	2779	3385	4028	4706

Power LKW 23/23, 30/23, 40/23, 50/13, 60/23, 70/23, 80/23,
Combi LKC 23/23, 30/23, 40/23, 50/23,
Max LKM 23/23, 30/23, 40/23, 50/23, 60/23, 70/23, 80/23



KORALINE WITH WOODEN BENCH TOP CONVECTOR – PRESSURE LOSSES

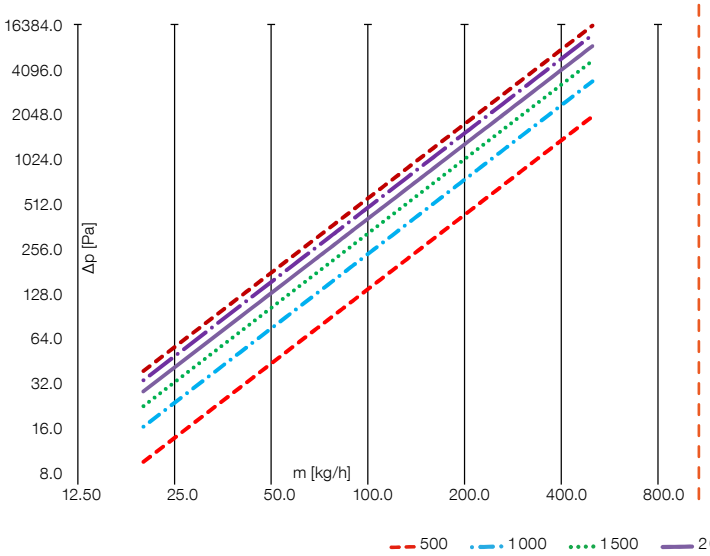
(Height/Width) **KORALINE LD 30/26**

Length L [mm]	Mass flow rate m [kg/h]											
	20	**40**	**80**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
	Heat exchanger pressure losses Δp [Pa]											
1000	27	88	288	422	845	1383	2026	2768	3604	4530	5542	6637
1200	31	102	334	489	979	1602	2348	3208	4177	5249	6422	7692
1400	35	115	378	554	1109	1815	2660	3634	4731	5946	7275	8713
1600	39	129	421	617	1236	2022	2963	4048	5271	6624	8104	9706
1800	43	141	463	679	1359	2224	3259	4453	5797	7286	8914	10676
2000	47	154	505	739	1480	2422	3549	4849	6313	7934	9707	11625

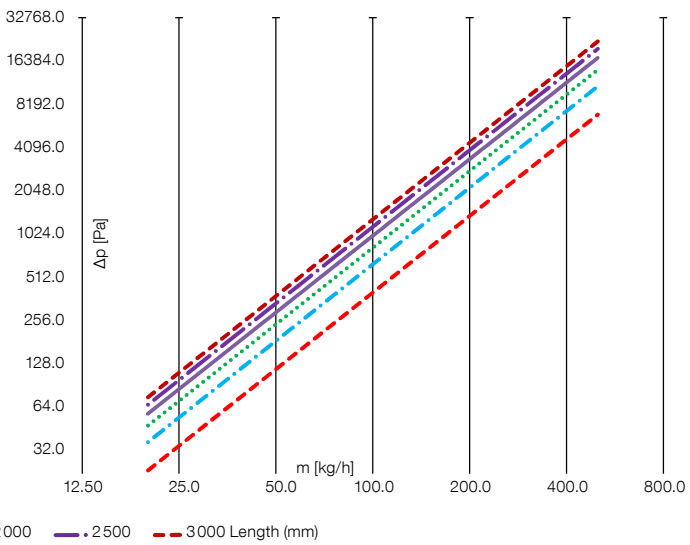
(Height/Width) **KORALINE LD 45/31**

Length L [mm]	Mass flow rate m [kg/h]											
	20	**40**	**80**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
	Heat exchanger pressure losses Δp [Pa]											
1000	36	122	415	616	1264	2104	3125	4316	5672	7186	8853	10670
1200	40	137	468	694	1424	2371	3521	4863	6391	8097	9975	12023
1400	44	151	517	768	1575	2623	3895	5380	7069	8956	11035	13300
1600	48	165	564	838	1719	2862	4250	5871	7715	9775	12043	14515
1800	52	179	610	905	1857	3092	4591	6342	8334	10558	13008	15678
2000	56	191	653	970	1990	3313	4919	6795	8929	11312	13937	16798

KORALINE LD 30/26



KORALINE LD 45/31



500 1000 1500 2000 2500 3000 Length (mm)

CALCULATIONS FOR OTHER TEMPERATURE GRADIENTS

The HEAT OUTPUT of individual free-standing convectors is determined by measuring nominal operating (temperature) conditions of 75/65/20°C ($t_1/t_2/t_3$) in accordance with ČSN EN 442. In accordance with these principal values for the heat output, further temperature 55/45/20°C were achieved by converting corresponding HEAT OUTPUTS as listed in this catalogue. Where heating units are designed for other temperature conditions, the following conversions will be necessary:

1 $\Delta t = \frac{(t_1 + t_2)}{2} - t_i$

2 $f = \left(\frac{\Delta t}{50}\right)^n$

3 $Q = f \cdot Q_n$

4 $m = 0.86 \cdot \frac{Q}{t_1 - t_2}$

Where

t_1	[°C]	input water temp
t_2	[°C]	output water temp
t_i	[°C]	ambient air temp
Δt	[K]	temperature gradient
n	[-]	temperature exponent
f	[-]	conversion coefficient
Q_n	[W]	nominal heat output at 75/65/20 °C
Q	[W]	required output for temperature gradient
m	[kg/h]	mass flow rate

Output can also be calculated according to the characteristic equations (see Basic Technical Data), or at **www.licon.cz**

Conversion

Example

- LKO free-standing convector 160/15/23
- input water temperature t_1 = 60 °C
- nominal output Q_n = 2159 W
- output water temperature t_2 = 50 °C
- temperature exponent n = 1.4302
- ambient air temperature t_i = 22 °C

Solution

To achieve 60/50/22°C operating conditions, calculate temperature gradient **Δt** according to formula 1 and conversion coefficient value f according to formula 2

1 $\Delta t = \frac{(t_1 + t_2)}{2} - t_i = \frac{(60 + 50)}{2} - 22 = 33$ K

Temperature exponent **n** for the required convector dimensions can be found in the output table.

2 $f = \left(\frac{\Delta t}{50}\right)^n = \left(\frac{33}{50}\right)^{1.4302} = 0.5520$

Output for required temperature gradient is calculated as follows:

3 $Q = f \cdot Q_n = 0.5520 \cdot 2159 = 1192$ W

KORALINE Optimal LKO free-standing convector

KORALINE OLOC with forced convection and aluminium silver elox grille

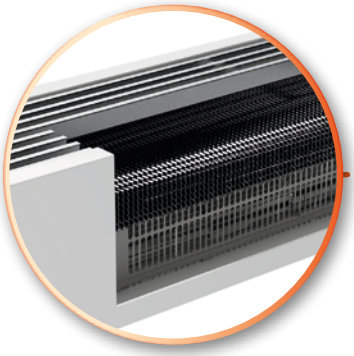
KORALINE
free-standing convectors with forced convection

OPTIMIZED CONVECTION

KORALINE FREE-STANDING CONVECTORS WITH FORCED CONVECTION

HIGH PERFORMANCE HEAT EXCHANGER

Specially designed Al/Cu heat exchanger ensures improved output and is the heart of every convector.



UNIQUE FANS

New fans with EC aluminium motors for quiet operation and low power consumption.

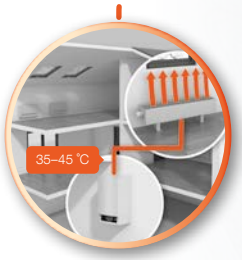
USER-FRIENDLY CONTROLS

User-friendly controls with room thermostats for smooth fan speed control, responding smoothly to changes in temperature to create a comfortable warm interior.

OPTIMIZED CONVECTION

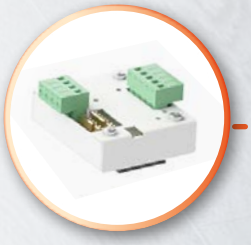
INCREASED THERMAL OUTPUT

More efficient heating translates into financial savings and more comfortable, warm interior.



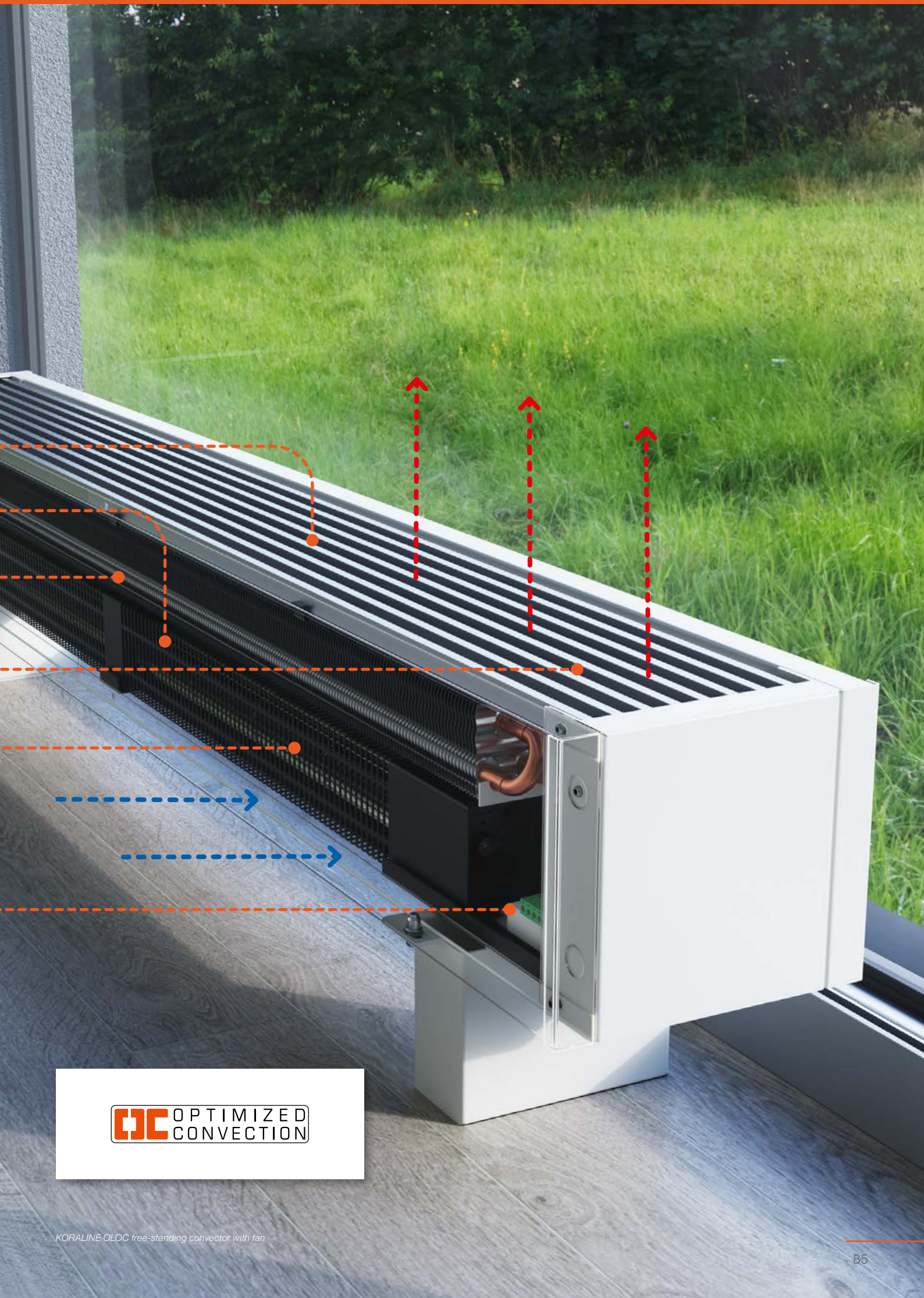
SUITABLE FOR LOW TEMPERATURE SYSTEMS

Sufficient efficiency for heating with condensing boilers and heat pumps. Also suitable for passive or low-energy houses.



GUARANTEED OUTPUT

Precise fan speed and declared output guaranteed thanks to sophisticated electronic control elements.



KORALINE OLOC free-standing convector with fan

KORALINE OLOC

Free-standing convectors with forced convection and high-performance 24 V DC fans

KORALINE OLOC

Specifications

Height	150 mm
Width	111, 176, 236 mm
Length	900, 1 200, 1 600, 2 000, 2 400, 2 800 mm
Output	from 133 to 6 061 W
Max. operating pressure	1.2 MPa
Max. operating temperature	110 °C
Max. surface temperature	40 °C
Connection thread	inner G 1/2"
Connection method	lower

The **KORALINE OLOC** range of free-standing convectors is equipped with energy-saving, high-performance fans and an electric motor with minimum power consumption enabling convectors to achieve high efficiency even at low temperature gradients. This makes these convectors ideal for heating of buildings fitted with heat pumps. The convectors can be controlled via BMS and due to their immediate response to changes in room temperature, very quiet operation and low surface temperature, they are suitable for domestic dwellings, apartment buildings and other public buildings.

Standard contents

- silver elox aluminium grille
- galvanized steel RAL 9016 white casing
- Al/Cu low-water volume heat exchangers, bleed valve, uniquely shaped fins
- set of low-energy EC 24 V DC quiet operation fans
- connection terminals and FCR-BOX electronic regulator
- floor-level brackets
- assembly instructions and durable packaging

Optional accessories

- further RAL lacquers for casings available
- elbow or straight lockshield (see p. 96)
- elbow or straight thermostatic valve (see p. 96)
- TEP 24 thermoelectric actuator (see p. 95)
- SIEMENS RDG160T, RDG260KN or RAB21DC room thermostat (see p. 94)
- QAA32 room temperature sensor (see p. 94)
- IRA 211 remote control (see p. 95)
- NTC temperature sensor (see p. 95)
- DC voltage supply (see p. 96)
- R-Box (viz str. 96)

Thermostatic valve is NOT supplied as KORALINE OLOC Standard and must be ordered as Optional accessory.

KORALINE OLOC may not be used with floor-level bracket casing, wall or sub-floor brackets.

Silver elox aluminium grille

Forced convection

Quiet operation

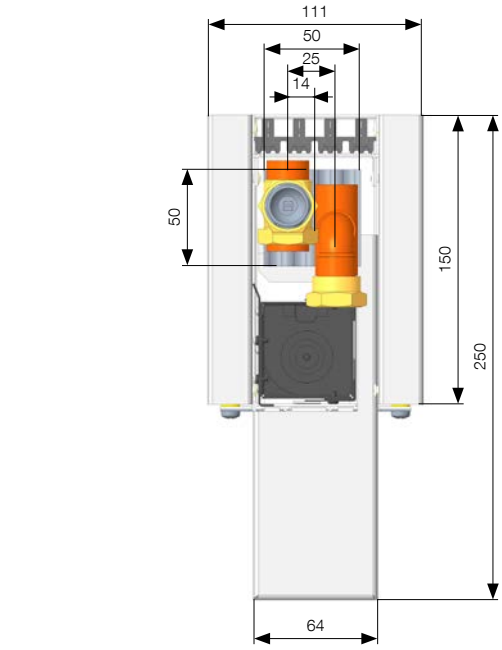
Other RAL colour chart lacquers available

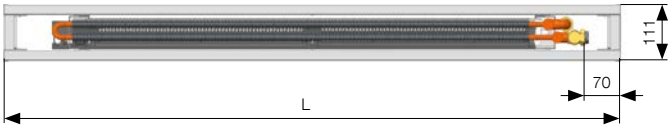
KORALINE OLOC 15/11

OPTIMIZED CONVECTION

Specifications

Height	150 mm
Width	111 mm
Length	900, 1 200, 1 600, 2 000, 2 400, 2 800 mm
Heat exchanger height	50 mm
Heat exchanger width	50 mm
Heat exchanger effective length	L - 300 mm
Fan impeller diameter	30 mm
Connecting thread	2× G 1/2" inner
Connection method	lower only





Measurements in mm.

Heat outputs and technical data

Width [mm]		**110**																							
Height [mm]		**150**																							
Total length [mm]		**900**				**1 200**				**1 600**				**2 000**				**2 400**				**2 800**			
Power input [W]		**0**	**1**	**2**	**2**	**0**	**1**	**2**	**2**	**0**	**1**	**2**	**3**	**0**	**1**	**2**	**3**	**0**	**2**	**3**	**5**	**0**	**2**	**4**	**6**
Sound pressure 1 m [dB(A)]		**0**	**10.1**	**19.4**	**23.2**	**0**	**10.3**	**19.5**	**23.7**	**0**	**10.7**	**20.1**	**23.9**	**0**	**11.6**	**22.4**	**24.9**	**0**	**11.9**	**22.9**	**25.1**	**0**	**12**	**23.1**	**25.2**
Sound power [dB(A)]		**0**	**25.7**	**32.7**	**41.4**	**0**	**26.5**	**33.9**	**42.3**	**0**	**26.4**	**34.7**	**43.4**	**0**	**26.8**	**35.7**	**44.3**	**0**	**27**	**36.5**	**45**	**0**	**26.5**	**37.6**	**45.8**
Switch position		**Off**	**1**	**2**	**3**	**Off**	**1**	**2**	**3**	**Off**	**1**	**2**	**3**	**Off**	**1**	**2**	**3**	**Off**	**1**	**2**	**3**	**Off**	**1**	**2**	**3**
Thermal Output	**t_i [°C]**	**Heat outputs [W]/EN 442**																							
90/70 °C	20	160	366	498	629	240	550	746	943	347	794	1078	1362	453	1038	1410	1782	560	1282	1742	2201	667	1527	2073	2620
	18	139	318	431	545	208	476	647	817	300	688	934	1181	393	900	1222	1544	485	1111	1509	1907	578	1323	1797	2271
75/65 °C	**20**	**133**	**305**	**415**	**524**	**200**	**458**	**622**	**786**	**289**	**662**	**898**	**1135**	**378**	**865**	**1175**	**1485**	**467**	**1069**	**1451**	**1834**	**556**	**1272**	**1728**	**2183**
	22	128	293	398	503	192	440	597	755	277	635	863	1090	363	831	1128	1425	448	1026	1393	1761	533	1221	1659	2096
	18	119	272	369	466	178	408	554	700	257	589	800	1010	336	770	1046	1321	415	951	1292	1632	494	1132	1538	1943
70/55 °C	20	113	260	352	445	170	389	529	668	246	562	764	965	321	735	999	1262	397	908	1234	1559	472	1081	1469	1856
	22	108	247	336	424	162	371	504	637	234	536	728	920	306	701	952	1203	378	866	1176	1486	450	1031	1400	1769
	18	85	195	265	335	128	293	398	503	185	423	575	727	242	554	752	950	299	684	929	1174	356	814	1106	1397
55/45 °C	20	80	183	249	314	120	275	373	472	173	397	539	681	227	519	705	891	280	641	871	1100	333	763	1037	1310
	22	75	171	232	293	112	256	348	440	162	370	503	636	212	484	658	831	261	598	813	1027	311	712	968	1223
	18	72	165	224	283	108	247	336	424	156	357	485	613	204	467	634	802	252	577	784	990	300	687	933	1179
50/40 °C	20	67	153	207	262	100	229	311	393	144	331	449	568	189	433	587	742	233	534	726	917	278	636	864	1092
	22	61	140	191	241	92	211	286	362	133	304	413	522	174	398	540	683	215	492	668	844	256	585	795	1004
	18	59	134	182	231	88	202	274	346	127	291	395	500	166	381	517	653	205	470	639	807	244	560	760	961
45/35 °C	20	53	122	166	210	80	183	249	314	116	265	359	454	151	346	470	594	187	427	581	734	222	509	691	873
	22	48	110	149	189	72	165	224	283	104	238	323	409	136	311	423	534	168	385	522	660	200	458	622	786

Temperature exponent m = 1

Measurements in mm.

KORALINE OLOC may not be used with floor-level bracket casing, wall or sub-floor brackets.

Further information

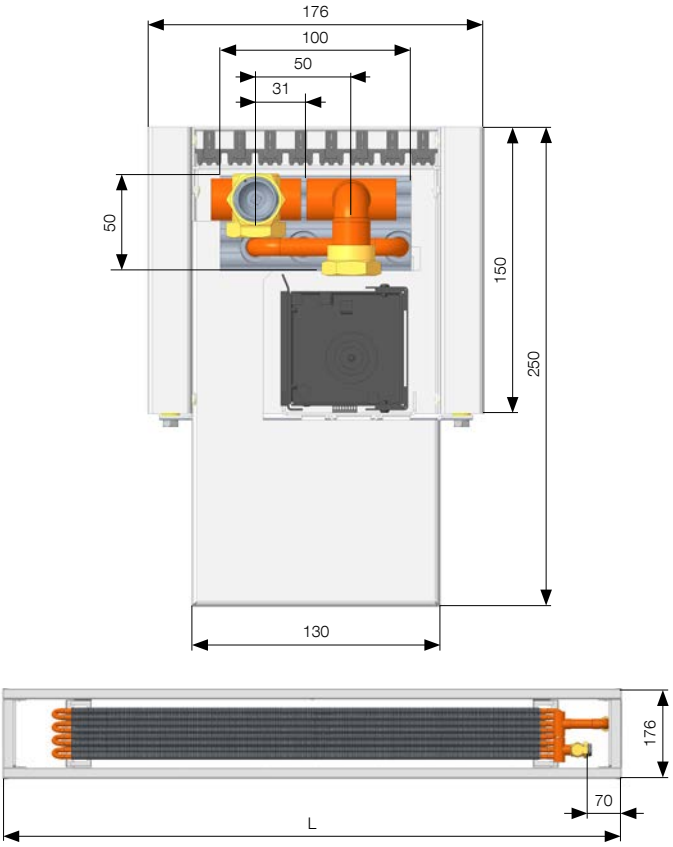
Correction coefficient p. 91, Assembly p. 92,
Regulation and accessories p. 93, Colour chart p. 109

KORALINE OLOC 15/18

OPTIMIZED CONVECTION

Specifications

Height	150 mm
Width	176 mm
Length	900, 1 200, 1 600, 2 000, 2 400, 2 800 mm
Heat exchanger height	50 mm
Heat exchanger width	100 mm
Heat exchanger effective length	L - 300 mm
Fan impeller diameter	40 mm
Connecting thread	2× G 1/2" inner
Connection method	lower only



Measurements in mm.

Heat outputs and technical data

Width [mm]		180																							
Height [mm]		150																							
Total length [mm]		900				1 200				1 600				2 000				2 400				2 800			
Power input [W]		0	1	2	3	0	2	3	4	0	2	4	5	0	3	5	6	0	3	6	8	0	4	7	9
Sound pressure 1 m [dB(A)]		0	19.8	27.6	30	0	20.1	28.3	31	0	21.2	29.5	32.4	0	21.9	30.5	33.5	0	22.4	31.3	34.5	0	22.7	31.9	35.3
Sound power [dB(A)]		0	27.8	35.6	38	0	28.1	36.3	39	0	29.2	37.5	40.4	0	29.9	38.5	41.5	0	30.4	39.3	42.5	0	30.7	39.9	43.3
Switch position		Off	1	2	3	Off	1	2	3	Off	1	2	3	Off	1	2	3	Off	1	2	3	Off	1	2	3
Thermal Output	**t_i [°C]**	Heat outputs [W]/EN 442																							
90/70 °C	20	250	1025	1208	1392	376	1537	1813	2088	543	2220	2618	3016	709	2904	3424	3944	876	3587	4229	4872	1043	4270	5035	5800
	18	217	888	1047	1206	326	1332	1571	1810	470	1924	2269	2614	615	2517	2967	3418	760	3109	3666	4222	904	3701	4364	5027
75/65 °C	**20**	**209**	**854**	**1007**	**1160**	**313**	**1281**	**1511**	**1740**	**452**	**1850**	**2182**	**2513**	**591**	**2420**	**2853**	**3287**	**730**	**2989**	**3525**	**4060**	**869**	**3558**	**4196**	**4833**
	22	200	820	967	1114	300	1230	1450	1670	434	1776	2095	2413	568	2323	2739	3155	701	2869	3384	3898	835	3416	4028	4640
	18	186	760	896	1032	279	1140	1344	1549	402	1647	1942	2237	526	2154	2539	2925	650	2660	3137	3613	774	3167	3734	4302
70/55 °C	20	177	726	856	986	266	1089	1284	1479	384	1573	1855	2136	503	2057	2425	2794	621	2541	2996	3451	739	3025	3567	4108
	22	169	692	816	940	254	1038	1224	1409	366	1499	1767	2036	479	1960	2311	2662	592	2421	2855	3289	704	2882	3399	3915
	18	134	547	644	742	200	820	967	1114	289	1184	1396	1609	378	1549	1826	2103	467	1913	2256	2598	556	2277	2685	3093
55/45 °C	20	125	512	604	696	188	769	906	1044	271	1110	1309	1508	355	1452	1712	1972	438	1793	2115	2436	522	2135	2518	2900
	22	117	478	564	650	175	717	846	974	253	1036	1222	1407	331	1355	1598	1841	409	1674	1974	2274	487	1993	2350	2707
	18	113	461	544	626	169	692	816	940	244	999	1178	1357	319	1307	1541	1775	394	1614	1903	2192	470	1922	2266	2610
50/40 °C	20	104	427	504	580	157	641	755	870	226	925	1091	1257	296	1210	1427	1643	365	1495	1762	2030	435	1779	2098	2417
	22	96	393	463	534	144	589	695	800	208	851	1004	1156	272	1113	1313	1512	336	1375	1621	1868	400	1637	1930	2223
	18	92	376	443	510	138	564	665	766	199	814	960	1106	260	1065	1255	1446	321	1315	1551	1786	383	1566	1846	2127
45/35 °C	20	83	342	403	464	125	512	604	696	181	740	873	1005	236	968	1141	1315	292	1196	1410	1624	348	1423	1678	1933
	22	75	307	363	418	113	461	544	626	163	666	785	905	213	871	1027	1183	263	1076	1269	1462	313	1281	1511	1740

Temperature exponent m = 1

Measurements in mm.

KORALINE OLOC may not be used with floor-level bracket casing, wall or sub-floor brackets.

Further information

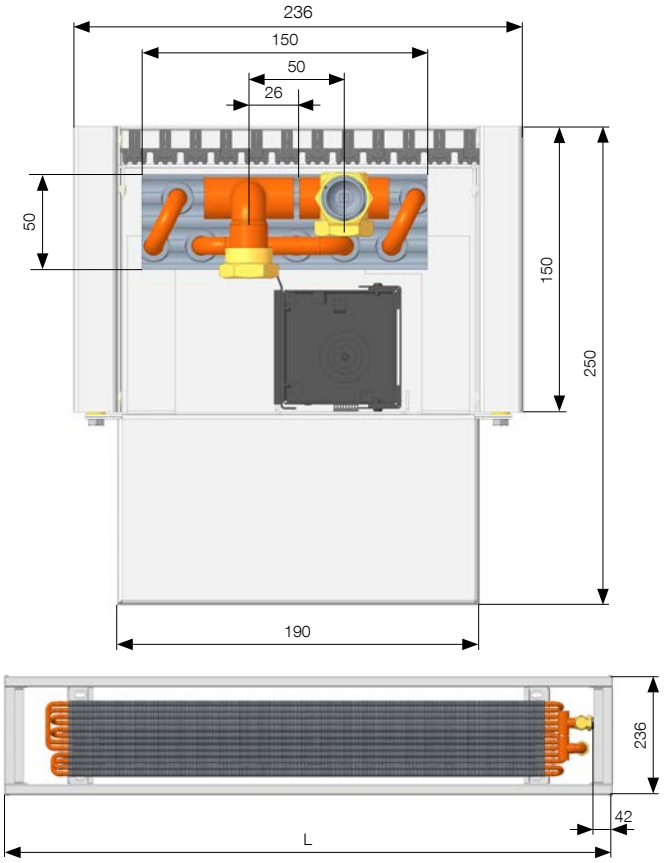
Correction coefficient p. 91, Assembly p. 92,
Regulation and accessories p. 93, Colour chart p. 109

KORALINE OLOC 15/24

OPTIMIZED CONVECTION

Specifications

Height	150 mm
Width	236 mm
Length	900, 1 200, 1 600, 2 000, 2 400, 2 800 mm
Heat exchanger height	50 mm
Heat exchanger width	150 mm
Heat exchanger effective length	L - 260 mm
Fan impeller diameter	40 mm
Connecting thread	2× G 1/2" inner
Connection method	lower only



Heat outputs and technical data

Measurements in mm.

Width [mm]		240																							
Height [mm]		150																							
Total length [mm]		900				1 200				1 600				2 000				2 400				2 800			
Power input [W]		0	1	2	3	0	2	3	4	0	2	4	5	0	3	5	6	0	3	6	8	0	4	7	9
Sound pressure 1 m [dB(A)]		0	19.8	27.6	30	0	20.1	28.3	31	0	21.2	29.5	32.4	0	21.9	30.5	33.5	0	22.4	31.3	34.5	0	22.7	31.9	35.3
Sound power [dB(A)]		0	27.8	35.6	38	0	28.1	36.3	39	0	29.2	37.5	40.4	0	29.9	38.5	41.5	0	30.4	39.3	42.5	0	30.7	39.9	43.3
Switch position		Off	1	2	3	Off	1	2	3	Off	1	2	3	Off	1	2	3	Off	1	2	3	Off	1	2	3
Thermal Output	**t_i [°C]**	Heat outputs [W]/EN 442																							
90/70 °C	20	313	1183	1508	1833	460	1738	2215	2692	655	2477	3157	3837	851	3216	4099	4982	1046	3956	5042	6128	1242	4695	5984	7273
	18	271	1025	1307	1588	398	1506	1919	2333	568	2147	2736	3325	737	2788	3553	4318	907	3428	4370	5311	1076	4069	5186	6303
75/65 °C	**20**	**261**	**986**	**1257**	**1527**	**383**	**1448**	**1846**	**2243**	**546**	**2064**	**2631**	**3197**	**709**	**2680**	**3416**	**4152**	**872**	**3297**	**4201**	**5106**	**1035**	**3913**	**4987**	**6061**
	22	250	946	1206	1466	368	1390	1772	2153	524	1982	2526	3070	681	2573	3279	3986	837	3165	4033	4902	994	3756	4787	5818
	18	232	877	1118	1359	341	1289	1642	1996	486	1837	2341	2846	631	2386	3040	3695	776	2934	3739	4545	921	3482	4438	5394
70/55 °C	20	222	838	1068	1298	326	1231	1569	1907	464	1755	2236	2718	603	2278	2904	3529	741	2802	3571	4340	880	3326	4239	5152
	22	211	799	1018	1237	310	1173	1495	1817	442	1672	2131	2590	574	2171	2767	3363	706	2670	3403	4136	838	3169	4039	4909
	18	167	631	804	977	245	927	1181	1436	349	1321	1684	2046	454	1715	2186	2657	558	2110	2689	3268	662	2504	3192	3879
55/45 °C	20	156	592	754	916	230	869	1107	1346	328	1239	1578	1918	425	1608	2050	2491	523	1978	2521	3064	621	2348	2992	3637
	22	146	552	704	855	214	811	1033	1256	306	1156	1473	1791	397	1501	1913	2325	488	1846	2353	2860	580	2191	2793	3394
	18	141	532	679	825	207	782	997	1211	295	1115	1421	1727	383	1447	1845	2242	471	1780	2269	2757	559	2113	2693	3273
50/40 °C	20	130	493	628	764	192	724	923	1122	273	1032	1315	1599	354	1340	1708	2076	436	1648	2101	2553	517	1956	2493	3030
	22	120	454	578	702	176	666	849	1032	251	950	1210	1471	326	1233	1571	1910	401	1516	1933	2349	476	1800	2294	2788
	18	115	434	553	672	169	637	812	987	240	908	1158	1407	312	1179	1503	1827	384	1450	1849	2247	455	1722	2194	2667
45/35 °C	20	104	394	503	611	153	579	738	897	218	826	1052	1279	284	1072	1366	1661	349	1319	1681	2043	414	1565	1995	2424
	22	94	355	452	550	138	521	664	807	197	743	947	1151	255	965	1230	1495	314	1187	1513	1838	373	1409	1795	2182

Temperature exponent m = 1

Measurements in mm.

KORALINE OLOC may not be used with floor-level bracket casing, wall or sub-floor brackets.

Further information

Correction coefficient p. 91, Assembly p. 92,
Regulation and accessories p. 93, Colour chart p. 109

CORRECTION COEFFICIENT kt FOR OTHER TEMPERATURE GRADIENTS Δt [K]

KORALINE OLOC 15/11, 15/18, 15/24

Δt [K]	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
kt	0.360	0.380	0.400	0.420	0.440	0.460	0.480	0.500	0.520	0.540	0.560	0.580	0.600	0.620	0.640	0.660	0.680	0.700	0.720	0.740	0.760	0.780

Δt [K]	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
kt	0.800	0.820	0.840	0.860	0.880	0.900	0.920	0.940	0.960	0.980	1.000	1.020	1.040	1.060	1.080	1.100	1.120	1.140	1.160	1.180	1.200

Temperature exponent m = 1

Free-standing convector weights and water volumes

KORALINE OLOC	15/11	15/18	15/24
[kg/m]	9.20	11.21	12.10
[l/m]	0.28	0.60	0.85

Weights shown not including packaging.

Convector composition

1. silver elox aluminium grille
2. galvanized steel casing
3. Al/Cu heat exchanger
4. 24 V DC fans
5. fan supports
6. floor-level brackets
7. connection terminals and electronic regulator FCR BOX
8. DIN 7981 screw

9. lockshield

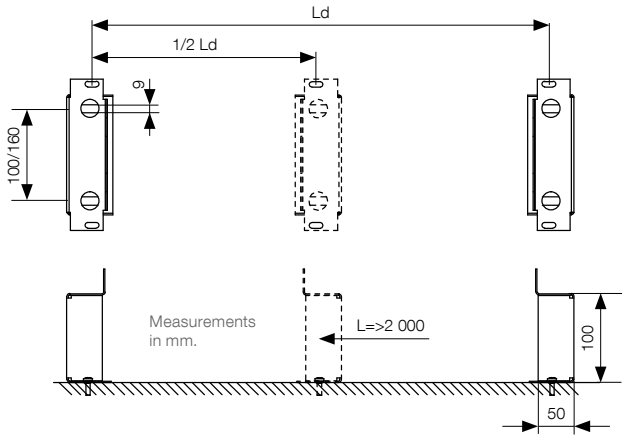
● Standard contents
● Summary of optional KORALINE OLOC accessories, see p. 87

Regulation is not included as standard and must be ordered separately according to technical parameters.
Regulation is identical for all OC system convectors with forced convection. For electrical regulation an control elements, see p. 93.

OLOC FREE-STANDING CONVECTORS ASSEMBLY AND MOUNTING

KORALINE OLOC assembly instructions (valid for all sizes)

Insert the fan bar into the bracket to establish the spacing for anchoring the bracket to the floor. The heat exchanger is then placed on the bracket and connected to the heating system. The heat exchangers must be bled. The fan sits on the fan support and is connected to the FCR Box. The final step is to install the aluminium grille and attach it by screwing it to the brackets. The grille is removable for easy cleaning. Please refer to the installation instructions for more detailed information.



L = Convector length
Ld = L – 300 mm (for convectors up to 1 400 mm in length)
Ld = L – 400 mm (for convectors up to 2 000 mm in length)
Ld = L – 600 mm (for convectors up to 2 000 mm in length)

For KORALINE OLOC convectors over 2 000 mm in length, we recommend the use of a central bracket for increased stability.

ORDER CODE

KORALINE	Forced convection		Length [cm]		Height [cm]		Width [cm]		Casing colour (RAL colour chart)	Grille colour	Heat exchanger colour		Electrical regulation
	OLOC	-	···	/	··	/	··	-	1 RAL 9016 9 other RAL olour	10 elox silver	1 without colour	-	RT standard

Example order code: OLOC-200/15/18-1101-RT

KORALINE OLOC free-standing convector with fan, Length 200 cm, Height 15 cm, Width 18 cm, Steel casing white RAL 9016, Aluminium silver elox grille, non-lacquered heat exchanger.

Regulation, Accessories, Technical Parameters and Acoustics

REGULATION

Regulation forms a central role in the heating outputs of convectors with fans. Fans and thermoelectric actuators are supplied with 24 V DC, and fan rotations are as standard controlled by a voltage of 0–10 V DC.

Standard contents

- A set of EC fans with synchronous motor in an aluminium frame. Featuring very low electrical consumption and very quiet operation.
- FCR-BOX electronic regulator which functions as a screw terminal for connecting the power cable, thermostat or BMS and the fan. Ensures smooth operation of the fan at required speed and independent control of thermoelectric valves.

Optional accessories

- 230 V AC/24 V DC direct current voltage supply according to the maximum electrical energy consumption of the convector. Five types of units are available for 60 W, 100 W, 100 W, 240 W and 480 W. Power supply unitx are supplied separately for mounting on the distribution board DIN rail assembly.
- Junction box for mounting 60 W, 100 W and 150 W sources.
- SIEMENS 24 V DC RDG 160T or RDG 260KN thermostats.
- 24 V DC Thermoelectric actuator, thermostatic valves, lockshield.
- NTC temperature sensor.

RAB 21-DC and RDG 160T thermostat function description

Convector output is controlled by fan speed and the flow of heating/cooling medium through the exchanger. The control voltage is 24 V. The RAB 21 DC or RDG 160T Siemens thermostats control the heating medium valve with a thermoelectric actuator, and in addition control fan speed with a control voltage of 0–10 V DC. Fan speed may be controlled automatically by the thermostat, or manually in three speed settings. Speed rating is set at a control signal size of 7 V. Fans may be blocked by a temperature sensor (see accessories). With the temperature sensor installed the fan rotation is dependent on a heating medium minimum temperature of approx. 37 °C. Temperature sensors are available as optional accessories.

Function description with BMS (Building Management System)

The BMS central control system may be used to control convectors. One BMS control output directly controls the opening/closing of valves and the other 0–10 V DC output controls fan speed. Rated power is achieved at 7 V DC. Valves and fans are supplied with 24 V DC.

Using the KNX system, convectors may be controlled with the RDG 260KN thermostat. The thermostat communicates with the KNX system, which transmits and receives data for the convector.

Installation must be carried out in accordance with valid regulations and safety procedures! The manufacturer cannot be held liable for any defects, damages and injuries caused by improper installation.

ACCESSORIES

SIEMENS RAB 21-DC Manual room thermostat

- optional accessory
- for 2-pipe heating systems
- manual 3-speed fan switch
- heating or cooling model
- 24 V DC, electrical consumption: 1 W
- 0–10 V DC EC fan
- setpoint setting range 8–30 °C
- switching differential <1 K
- IP rating IP 30
- dimensions w×h×d: 96×110×36 mm
- **order code:** REG-RAB21DC

QAA32 external room temperature sensor

- optional accessory
- for measuring temperature in heating systems where a thermostat cannot be placed in the room
- suitable for installation at swimming pools
- can be combined with RDG 160T and RDG 260KN
- setpoint setting range: 0–40 °C, accuracy at 25°C: ± 0.3 K
- NTC sensor, 3 kΩ at 25 °C
- IP rating IP 30
- dimensions w×h×d: 96.4×99.6×36 mm
- **order code:** REG-S-QAA32

SIEMENS RDG 160T electronic room thermostat with LCD display

- optional accessory
- for 2 and 4 pipe heating systems
- 7-day time program with 8 programmable timers
- automatic or manual heating/cooling changeover
- manual or automatic 3-speed fan control
- operating modes Comfort, Economy and Protection
- operating voltage 24 V DC, power consumption 1 W
- 0–10 V DC ECM fan
- setpoint setting range 5–40 °C
- adjustable switching differential 0.5 to 6 K
- IP rating IP 30
- dimensions w×h×d: 93×128×31 mm

Accessories

- can be combined with separate QAA32 room temperature sensor, eg. for termostat installation out of publicly accessible space or for installation in humid environments
- IRA211 infrared remote control
- **order code:** REG-RDG160T

For correct operation, RDG 160T or RDG 260KN thermostats must be set according to the LICON instructions included in the thermostat package. The thermostat is supplied pre-set for heating in a 2-pipe system.

SIEMENS IRA 211 infrared remote control

- optional accessory
- infrared remote control for RDG 160T
- heating or cooling operation
- temperature setting
- fan speed selection
- power supply 2× 1.5 V AAA batteries
- IP rating IP 30
- dimensions w×h×d: 42×106×18 mm
- **order code:** REG-IRA211

TEP 24 thermoelectric actuator

- optional accessory
- IP rating IP 44
- reset time 4 min
- unit height 65 mm
- M 30×1.5 thread
- cable length 2.5 and 5 m
- closed without voltage
- operating voltage 24 VDC
- electrical consumption <2 W
- **order code** (2.5 m cable): REG-TEP24-250
- **order code** (5 m cable): REG-TEP24-500

SIEMENS RDG 260KN electronic room thermostat with LCD display

- optional accessory
- regulation of ambient temperature and relative humidity
- for 2 and 4 pipe heating systems
- power indicator function for energy-optimised system operation
- built-in relative humidity and temperature sensor
- KNX (S-mode and LTE-mode) for integration into BMS
- 7-day programme with up to 3 temperature setting periods per day
- automatic (continuous) or manual (3-level) fan speed regulation
- Comfort, Economy and Protection operation modes
- 3 multifunctional inputs (window contact, motion detector, access card reader, heating/cooling switch...)
- operating voltage 24 V DC, power consumption 4 W
- EC fan control voltage 0–10 V DC
- setpoint setting range 5–40 °C
- adjustable hysteresis switching differential 0.5–6 K
- IP rating IP 30
- wall mounting with base mounting plate
- dimensions w×h×d: 92×134×25 mm

Accessories

- can be combined with separate QAA32 room temperature sensor, eg. for termostat installation out of publicly accessible space or for installation in humid environments
- **order code:** REG-RDG260KN
- can be commisioned using the Siemens PCT Go mobile application

NTC temperature sensor

- optional accessory
- temperature sensor situated on the exchanger blocks the fan until the temperature of the exchanger medium is approx. 37 °C in heating mode, and 15 °C in cooling mode
- NTC sensor, 10 kΩ at 25 °C
- cable length 0.3 m
- connect to FCR-BOX in the convector
- includes installation clips
- **order code:** REG-S-NTC
- delivered separately. For mounting on the heat exchanger during production, please specify in the order notes when ordering.

REGULATION AND ACCESSORIES

R-Box

optional accessory
- combined with the power supply it creates the control voltage for the fan
- for use with thermostat at 230 V AC
- 3 programmable speed settings
- input voltage 230 V/50 Hz
- output signal 0 to 10 V/1 kΩ
- 4 kV AC galvanic isolation opto-isolator
- IP rating IP 30
- mounted on DIN rail on distribution board
- ambient operating temperature 0–40 °C
- dimensions w×h×d: 70×58×90 mm
- electrical diagram at www.licon.cz
- **order code:** REG-RBOX17

When using a thermostat not recommended by LICON, an R-Box must be used to achieve a signal of 0–10 V.

Junction box

optional accessory
- embedded in wall
- for installation of AC power source (60 W, 100 W and 150 W)
- IP rating IP 40
- dimensions w×h×d ÷ 318×258×72 mm
- **order code:** REG-IB

60 W, 100 W, 150 W, 240 W and 480 W DC voltage supply

optional accessory
- switch-mode DC power supply
- silent operation, high efficiency
- DIN rail assembly
- IP rating IP 20

power supply	60 W	100 W	150 W	240 W	480 W
input voltage	85~264 V AC	85~264 V AC	85~264 V AC	88~264 V AC	90~264 V AC
output voltage	24 V DC/2.5 A	24 V DC/3.9 A	24 V DC/6.25 A	24 V DC/10 A	24 V DC/20 A
dimensions w×h×d	53×90×55 mm	70×90×55 mm	105×90×55 mm	60×126×114 mm	86×126×129 mm
order code	REG-PS60	REG-PS100	REG-PS150	REG-PS240	REG-PS480

We recommend a power supply at least 20% greater than the calculated power input. See p. 100.

Lockshield

optional accessory
- straight or elbow
- size ½" G
- nickel brass
- max. operating pressure PN 10
- max. operating temperature 90 °C
- **order code:**
  straight lockshield: REG-LS
  elbow lockshield: REG-LA

Pre-set	1	2	3	4	5	6	7	8	9
revs	1 ¼	1 ½	1 ¾	2	2 ½	3	3 ½	4	Ú.O.
K_v	0.14	0.2	0.31	0.43	0.6	0.79	1	1.2	1.35

Kv flow coefficient (m^3/h)
Ú.O. fully open

Thermostatic valve

optional accessory
- elbow or straight
- pre-set value K_v
- size ½" G
- thread M 30×1,5
- nickel brass
- max. operating pressure PN 10
- max. operating temperature 90 °C
- **order code:**
  straight thermostatic valve: REG-TVS
  elbow thermostatic valve: REG-TVA

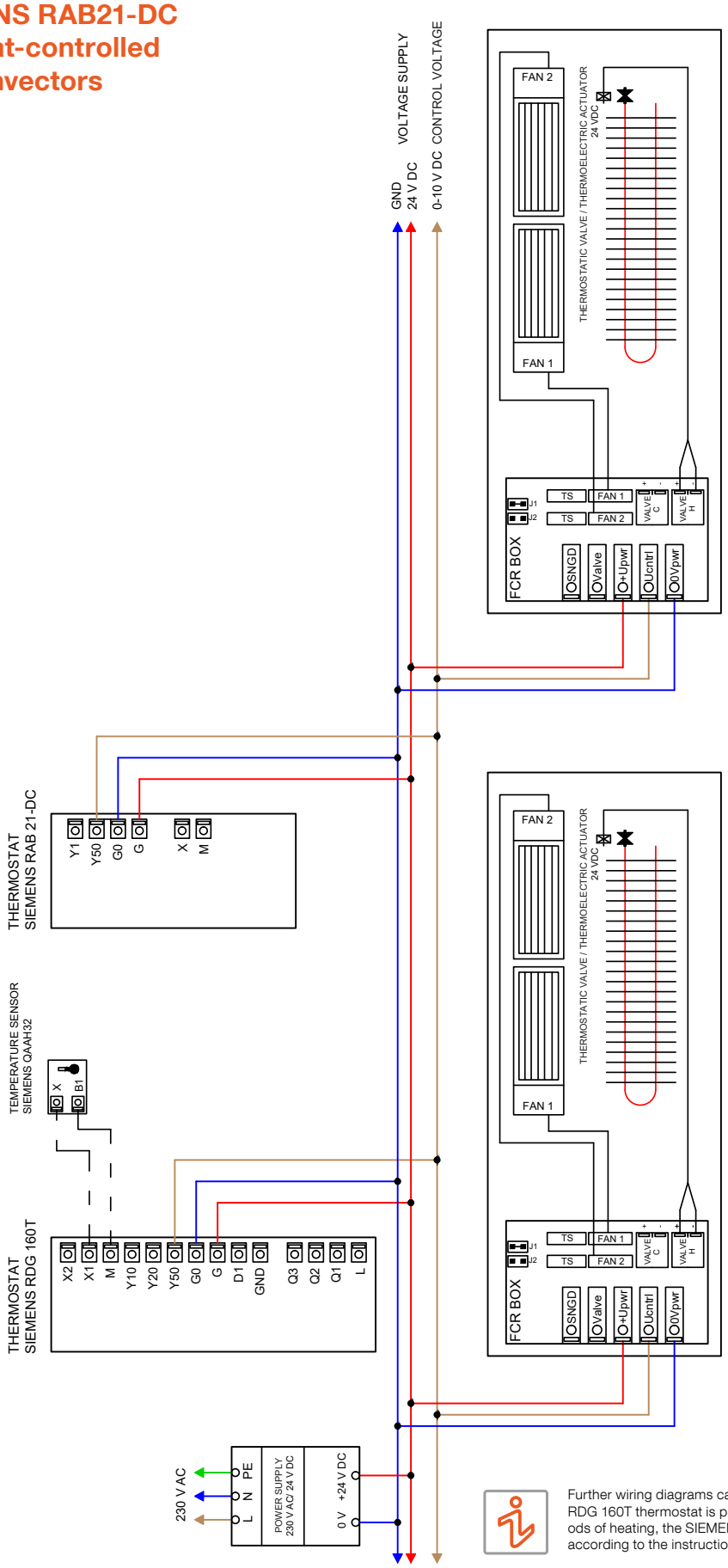
Pre-set	1	2	3	4	5	6
K_v (Δt = 2K)	0.10	0.20	0.30	0.40	0.50	0.60
K_{vs}	0.10	0.20	0.30	0.40	0.57	0.80

K_v flow coefficient (m^3/h)
K_{vs} maximum flow (m^3/h)
Δt = 2K valve proportional band (K)

CONVECTOR WIRING DIAGRAMS

For SIEMENS RDG 160T or SIEMENS RAB21-DC thermostat-controlled OLOC convectors

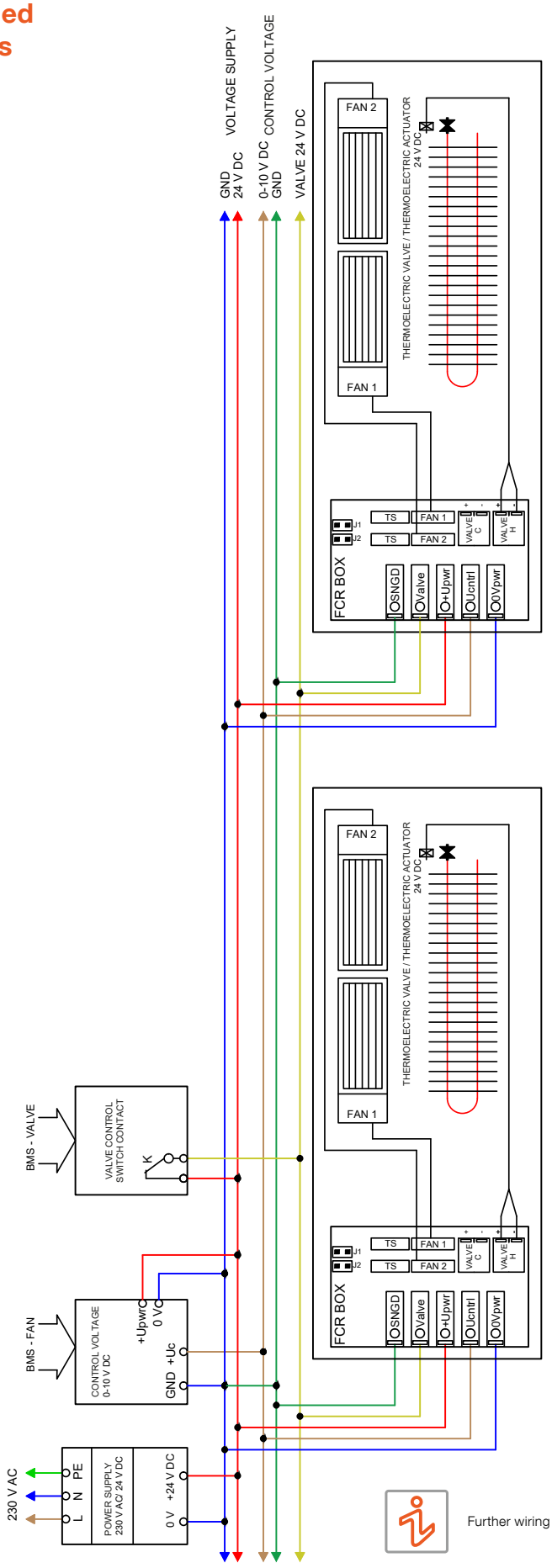
Heating



Further wiring diagrams can be found at **www.licon.cz**, or upon request. The RDG 160T thermostat is pre-set for 2-pipe heating systems. For alternative methods of heating, the SIEMENS RDG 160T or RAB21-DC thermostats must be set according to the instructions enclosed, or see downloads at **www.licon.cz**.

CONVECTOR WIRING DIAGRAMS

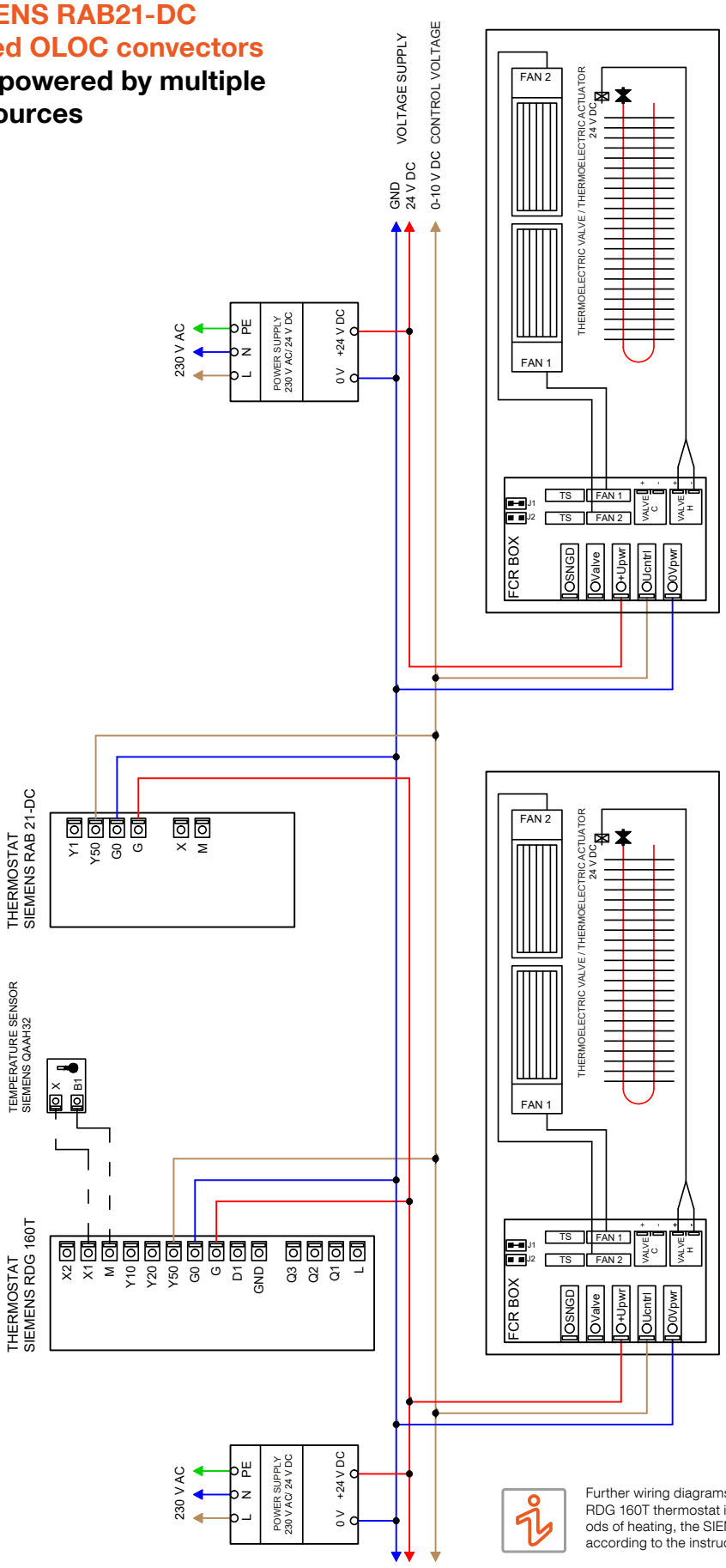
For BMS controlled OLOC convectors
Heating



Further wiring diagrams can be found at **www.licon.cz**, or upon request.

For SIEMENS RDG 160T or SIEMENS RAB21-DC controlled OLOC convectors

Heating powered by multiple power sources



Further wiring diagrams can be found at **www.licon.cz**, or upon request. The RDG 160T thermostat is pre-set for 2-pipe heating systems. For alternative methods of heating, the SIEMENS RDG 160T or RAB21-DC thermostats must be set according to the instructions enclosed, or see downloads at **www.licon.cz**.

NOISE AND ACOUSTICS

Licon make use of the most progressive technology in the manufacture of convectors and fans. Our fans use EC motors, which are silent, do not vibrate and display extraordinarily low power consumption (7 W). In terms of noise levels, the design of convectors must take into account the acoustic load appropriate for their intended use. Requirements for silent operation will be diverse, whether installed in living rooms and offices, or in corridors, halls, etc. For this reason, in addition to design in terms of performance and dimensions, an assessment of the correct acoustic load should not be neglected. This can be achieved using the formula below, where it is understood that sound pressure levels vary in different environments. We would recommend the maximum acoustic load in living rooms as 30 dB L_{pA}. Acoustic parameters were measured in an accredited testing room in accordance with ČSN EN 9614-2 Acoustics – Determination of sound power levels of noise sources using sound intensity – Part 2: Measurement by scanning.

Listed acoustic parameters

The ČSN EN 16430 standard defines the base unit of sound power [L_{WA}/dB], which is listed for all products equipped with fans.

To facilitate orientation, sound pressure levels [L_{pa}/dB] are listed in addition.

The sound pressure values listed were calculated using the following formula. They apply to a distance of 1m from the trench heater (noise source) situated in the centre of a wall beneath a window with one sound reflector surface and an otherwise sound absorbing environment (furnished room).

Definition and description of acoustic values

Sound power [L_{WA}/dB]

This is the base unit defining the noise level of a particular device. Sound power is the sound generated by the sound source (energy transmitted into a room). It is not dependent on space or distance. It is used for all further acoustic load calculations for rooms.

Sound pressure [L_{pA}/dB]

This is the measure of the level of sound registered at a certain distance from the sound source. Sound pressure is the change in air pressure generated by the sound source. It is the measure of volume heard by a person.

Example: Conversion of sound power to sound pressure

$$L_{pA} = L_{WA} + 10 \cdot \log\left(\frac{Q}{4 \cdot \pi \cdot r^2}\right)$$

L_{pA}	[dB(A)]	sound pressure level weighted by filter A
L_{WA}	[dB(A)]	sound power level weighted by filter A
Q	[-]	noise emission direction factor
r	[m]	distance from test sample

EXAMPLE DC POWER SUPPLY SIZE CALCULATIONS

For regulation, the electric power input must be correctly calculated in order to select the size of the DC power supply. The total wattage of units is calculated using the total electric power consumption of all thermostat-controlled convectors with fans and thermoelectric actuators.. Fan electrical power consumption is shown in the output tables for each type and length of convector. **Here we have selected the values for the third fan speed.**

Example

The design will use the following KORALINE OLOC convectors:
2× KORALINE OLOC – 160/15/18 – in the table we see a power consumption of 5 W
4× KORALINE OLOC – 240/15/18 – in the table we see a power consumption of 8 W
5× KORALINE OLOC – 280/15/18 – in the table we see a power consumption of 9 W
Optional 11× thermoelectric actuator – 11 × 2 W = 22 W

Total power input

5+5+8+8+8+8+9+9+9+9+9+22=109 W + increase by a reserve of 20%.
Required power supply size: 150 W.

18 cm															
15 cm															
160 cm				200 cm				240 cm				280 cm			
0	2	4	5	0	3	5	6	0	3	6	8	0	4	7	9
0	21.2	29.5	32.4	0	21.9	30.5	33.5	0	22.4	31.3	34.5	0	22.7	31.9	35.3
0	29.2	37.5	40.4	0	29.9	38.5	41.5	0	30.4	39.3	42.5	0	30.7	39.9	43.3
Off	1	2	3	Off	1	2	3	Off	1	2	3	Off	1	2	3

KORALINE OLOC free-standing convectors

General product information

GENERAL PRODUCT INFORMATION

Quality

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

Guarantee

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

Maintenance

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

All materials relating to convectors are available to download at **www.licon.cz**.

Transport and storage instructions

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

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

KORALINE Combi LKC free-standing convectors

SUMMARY OF ACCESSORIES FOR ALL TYPES OF LICON HEATING ELEMENTS

Accessories suitable for model ranges with natural convection

Accessories	Order code	Trench heaters KORAFLEX FK	Free-standing convectors KORALINE LK	Free-standing convectors KORALINE LD	Wall-mounted convectors KORAWALL OKN	Heat exchangers KORABASE	Facade convectors KORASPACE
Straight lockshield ½"	REG-LS						
Elbow lockshield ½"	REG-LA						
Straight thermostatic valve ½"	REG-TVS						
Elbow thermostatic valve ½"	REG-TVA						
THERA 6 thermostatic head	REG-TH6	–					
CLASSIC thermostatic head	REG-THC	–					
DESIGN thermostatic head	REG-THD	–					
Thermostatic head with incorporated control and immersion remote sensor	REG-TH5						
Siemens RAA 21 room thermostat	REG-RAA21						
Siemens RDE 100.1 room thermostat	REG-RDE100.1						
Siemens RDG 160T room thermostat	REG-RDG160T	–	–	–	–	–	–
Siemens RDG 260KN room thermostat	REG-RDG260KN	–	–	–	–	–	–
Siemens RAB 21 DC room thermostat	REG-RAB21DC	–	–	–	–	–	–
Siemens IRA 211	REG-IRA211	–	–	–	–	–	–
Siemens QAA32	REG-S-QAA32						
NTC temperature sensor	REG-S-NTC	–	–	–	–	–	–
TEP 24 thermoelectric actuator 2.5 m cable	REG-TEP24-250						
TEP 24 thermoelectric actuator, 5 m cable	REG-TEP24-500						
TEP 230 thermoelectric actuator, 2.5 m cable	REG-TEP230-250						
TEP 230 thermoelectric actuator, 5 m cable	REG-TEP230-500						
Pattress box	REG-IB						
R-BOX 2017	REG-RBOX17	–	–	–	–	–	–
60 W 53 × 90 × 55 mm DC power supply	REG-PS60						
100 W 70 × 90 × 55 mm DC power supply	REG-PS100						
150 W 105 × 90 × 55 mm DC power supply	REG-PS150						
240 W 60 × 126 × 114 mm DC power supply	REG-PS240						
480 W 86 × 126 × 129 mm DC power supply	REG-PS480						
10 cm Flexible hose	REG-F10		–	–	–		
12 cm Flexible hose	REG-F12		–	–	–		
30 cm Flexible hose	REG-F30		–	–	–		
Brass elbow	REG-E90		–	–	–		
OSB cover	OSB		–	–	–	–	–
Sound insulation sheeting	Sound insulation sheeting	–	–	–	–	–	–

recommended optional unsuitable –

REG-LS

REG-LA

REG-TVS

REG-TVA

REG-TH5

REG-S-QAA32

REG-TH6

REG-THC

REG-THD

REG-S-NTC

REG-TEP24-250, REG-TEP24-500, REG-TEP230-250, REG-TEP230-500

REG-IB

REG-RBOX17

REG-F10

REG-F12

REG-F30

REG-E90

Accessories suitable for models with forced convection

Accessories	Order code	Trench heaters KORAFLEX FV	Free-standing convectors KORALINE OLOC	Wall-mounted convectors KORAWALL OKIOC
Straight lockshield ½"	REG-LS			
Elbow lockshield ½"	REG-LA			
Straight thermostatic valve ½"	REG-TVS			
Elbow thermostatic valve ½"	REG-TVA			
THERA 6 thermostatic head	REG-TH6	–	–	–
CLASSIC thermostatic head	REG-THC	–	–	–
DESIGN thermostatic head	REG-THD	–	–	–
Thermostatic head with incorporated control and immersion remote sensor	REG-TH5	–	–	–
Siemens RAA 21 room thermostat	REG-RAA21	–	–	–
Siemens RDE 100.1 room thermostat	REG-RDE100.1	–	–	–
Siemens RDG 160T room thermostat	REG-RDG160T			
Siemens RDG 260KN room thermostat	REG-RDG260KN			
Siemens RAB 21 DC room thermostat	REG-RAB21DC			
Siemens IRA 211	REG-IRA211			
Siemens QAA32	REG-S-QAA32			
NTC temperature sensor	REG-S-NTC			–
TEP 24 thermoelectric actuator 2.5 m cable	REG-TEP24-250			
TEP 24 thermoelectric actuator, 5 m cable	REG-TEP24-500			
TEP 230 thermoelectric actuator, 2.5 m cable	REG-TEP230-250	–	–	–
TEP 230 thermoelectric actuator, 5 m cable	REG-TEP230-500	–	–	–
Pattress box	REG-IB			
R-BOX 2017	REG-RBOX17			
60 W 53 × 90 × 55 mm DC power supply	REG-PS60			
100 W 70 × 90 × 55 mm DC power supply	REG-PS100			
150 W 105 × 90 × 55 mm DC power supply	REG-PS150			
240 W 60 × 126 × 114 mm DC power supply	REG-PS240			
480 W 86 × 126 × 129 mm DC power supply	REG-PS480			
10 cm Flexible hose	REG-F10			
12 cm Flexible hose	REG-F12			
30 cm Flexible hose	REG-F30			
Brass elbow	REG-E90			
OSB cover	OSB		–	–
Sound insulation sheeting	Akustická folie		–	–

recommended optional unsuitable –


REG-RAA21


REG-RDE100.1


REG-RDG160T


REG-RDG260KN


REG-RAB21DC


REG-IRA211


REG-PS60


REG-PS100


REG-PS150


REG-PS240


REG-PS480

REFERENCES

UBS Pleyad Business Centre
Saint-Denis, France

MCBA Museum,
Lausanne, Switzerland

Residence du Lac,
Morges, Switzerland

Museum Munch,
Oslo, Norway

Lachta Centre,
Saint Petersburg, Russia

Neva Towers,
Moscow, Russia

Zolotoy Ostrov,
Moscow, Russia

Fyrstikkalléen 1 AS Oslo,
Norway

The Circle – airport,
Zurich, Switzerland

Panorama City,
Bratislava, Slovakia

NÚSCH Children's Cardiac
Centre, Bratislava, Slovakia

Marina Lipno apartments,
Czech Republic

Einsteinova Business Centre,
Bratislava, Slovakia

Harpa Concert Hall,
Reykjavík, Iceland

Nordea Headquarters,
Copenhagen, Denmark

Marina Lipno apartments,
Czech Republic

The Ještěd Hotel
Liberec, Czech Republic

LCD Leontief Cape,
Saint Petersburg, Russia

Residence Skolkovo,
Moscow region, Russia

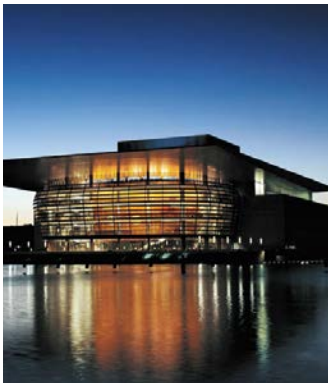
Conference and exhibition centre,
Saint Petersburg, Russia

LCD apartments,
Moscow, Russia

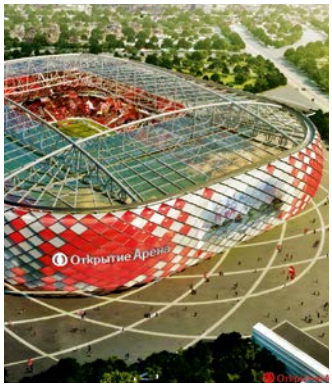
Technical University,
Liberec, Czech Republic

Airport,
Brno, Czech Republic

Celsis Headquarters,
Lithuania



Opera House,
Copenhagen, Denmark

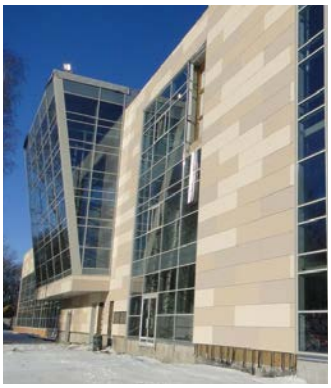


Spartak Arena,
Moscow, Russia

City Green Court,
Prague, Czech Republic

BC Trinity Place,
Saint Petersburg, Russia

Main Point Karlín,
Praha, Czech Republic



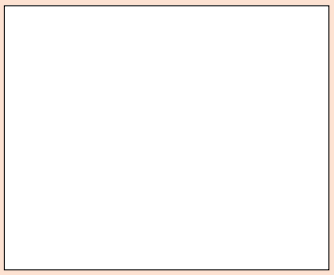
SBK Spartak,
Saint Peterburg, Russia

Triplex – Apartment block,
Karlovy Vary, Czech Republic

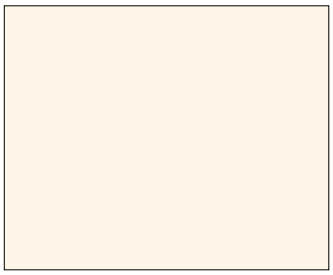
Trinity Office Centre,
Brno, Czech Republic

Lavicový konvektor KORALINE Max LKM

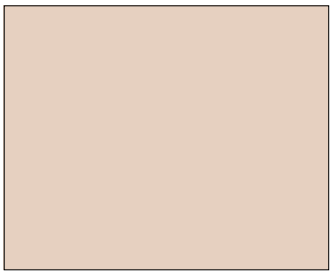
COLOUR CHART



code 10
White RAL 9016



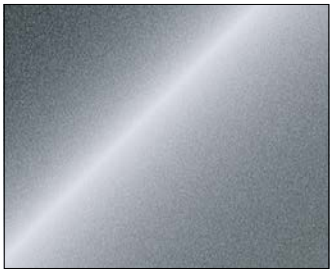
code 14
Jasmine



code 16
Bahama

code 22
Manhattan

code 26
Pergamon



code 32
Anthrazit Metallic

code 35
Silber RAL 9006

code 37
Red RAL 3001

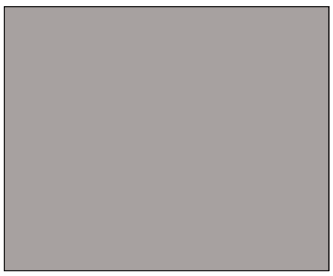
code 39
Black RAL 9005

code 40
Alloy Black

code 42
Gold

code 45
Pearl Brown

code 47
RAL 9007

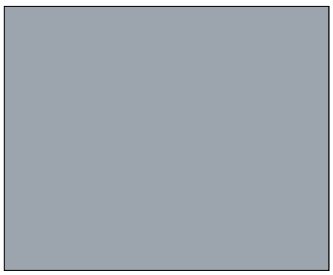


code 48
RAL 9006

code 49
RAL 7024

code 51
RAL 7016

code 54
RAL 7015



code 57
RAL 7040

Notice:

There is a potential for variations in colour between the colour chart and heating units. RAL 9016 white is the standard lacquer. Other colours shown in the Colour Chart may be ordered at an extra charge according to the valid price list.

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