PURMO
TECHNICAL BROCHURE

Technical data
06 – 2008

PURMO

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General

The PURMO radiators are produced from high-quality material and components.

Excellent energy result

Modern radiators demand remarkable low water content to ensure controllable heat-up and high output. The small amount of water combined with the large convector plate radiates heat to an economical energy level.

Heating network

PURMO radiators are to be used on indirect or closed heating systems, where the free access of oxygen is prevented. A compact, well planned and constructed system saves energy and components making up the system. Draining in the system requires more fresh water, which result in rust on the inside of the steel surface. Due to this it is not advisable to empty the heating system for the summer. The water temperature should be between 0 to 110°C, the pH value between 7 and 9 and the maximum volume of oxygen 0,1 mg/kg.

Pressure endurance

The working pressure of PURMO radiators is 10 bar (6 or 7 bar for some models). It must not be exceeded when planning the heating system. In heating systems of high buildings one also has to remember the dynamic, additional pressure given by the pump device, beside the normal hydrostatic pressure. All PURMO radiators are
test pressured in the production.

Mounting

Current directives and generally accepted practices must befollowed when the radiator is mounted. It is not recommended to remove the plastic cover until all the construction work is completed and the building is ready to handover. The wall material must always be checked out, before the brackets are mounted, so that a stable fitting can be reached considering the weight and use of the radiator. The PURMO Monclac bracket can be used on most wall types. Most radiators can be mounted with a floor fixing bracket also.

Application environment

PURMO radiators are intended for heating normal rooms. In case they are mounted in wet situations, the mounting must always be on dry walls and not directly under a shower or similar item.

261006

BS EN 442

Guarantee

Each PURMO radiator is guaranteed for 10 years from the date of installation against defects caused by faulty materials or manufacture. The defective product is replaced by a similiar or technically corresponding radiator.

The guarantee does not cover damages that are due to faulty storage and handling at delivery or installation, nor damages that are due to faulty use of the radiator, such as inside and outside rust, use of corrosive substances, too high pressure or damage due to freezing.

The guarantee does not cover incidental damages caused by the PURMO product, costs for change of product, production loss of the customer, unreceived profit or other indirect costs.

In case of a guarantee claim the buyer must contact the seller and present some kind of evidence of purchase of the product, for example, order confirmation, delivery note or identification number of the radiator. The defective product always has to be sent back to Rettig Värme Ab for inspectation within one month from the day of complaint, if not otherwise agreed upon.

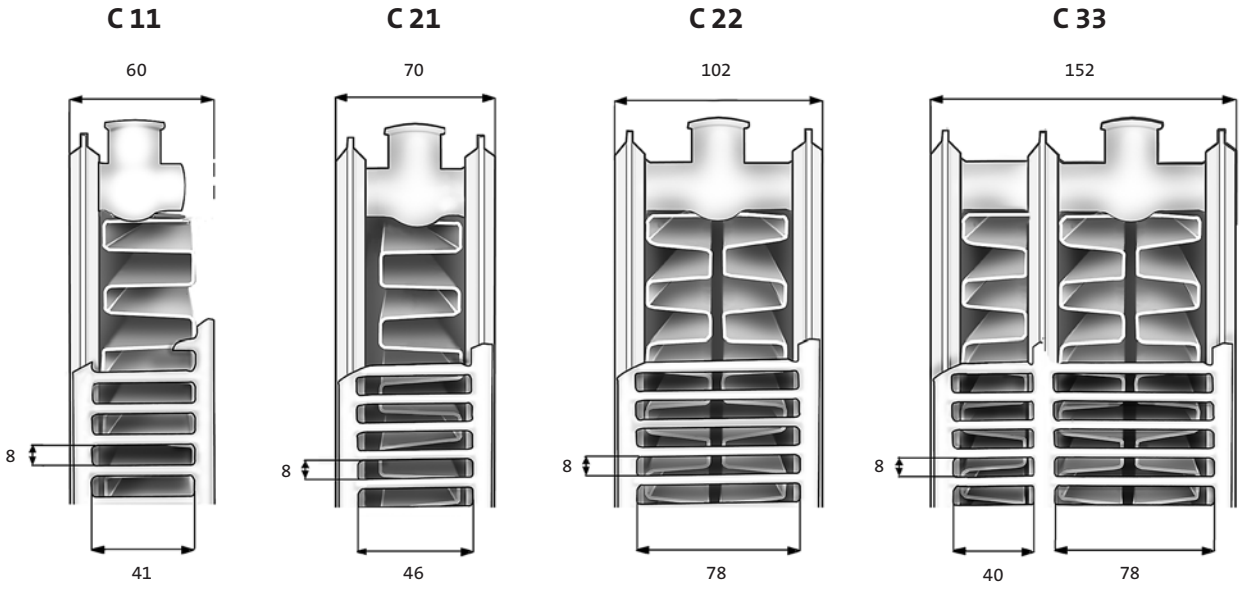
PURMO Compact

Technical data

Construction	EN 442-1
Material	Cold rolled steelplate EN 10130
Surface treatment	Surface treatment in five steps: • Alkalic degreased • Phosphated • Dipped in primer (electrical); KAT • Coated with polyester-epoxy resin powder • Stoved (about 200°C) The surface treatment process follows the standard DIN 55900.
Standard colour	White, RAL 9016. Other colours p. 79.
Working pressure	10 bar
Connections	4 side connections 1/2" ISO 228
Certification	SFS-EN ISO 9001 and ISO 14001
Height	200, 300, 400, 450, 500, 600 and 900 mm
Length	400–3 000 mm
Types	C 11, single panel with one convector plate C/CV21, double panel with one convector plate C/CV22, double panel with two convector plates C /CV33, triple panel with threee convector plates CV44, four panels with four convector plates

PURMO Compact is delivered with side panels and top grille. The range is the most extensive in the market. All PURMO radiators are intended for closed heating systems.

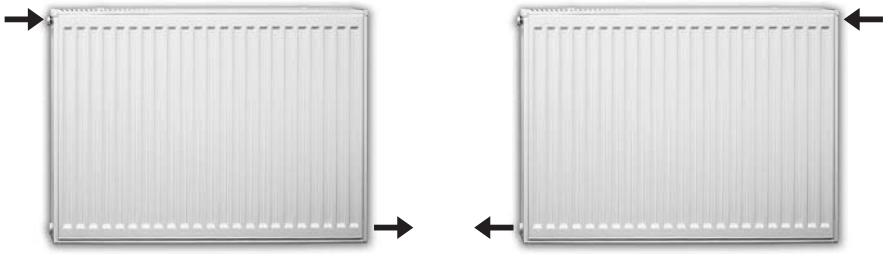
Radiator types



Connection

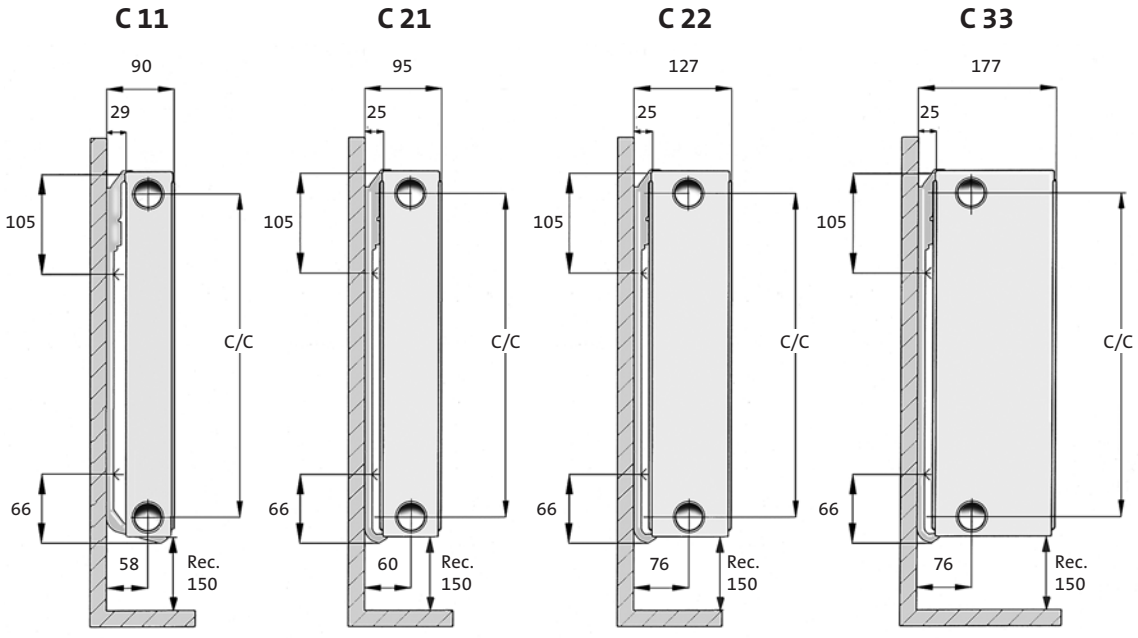
Note!
The radiator must be connected as above. Faulty connections might cause a heat output decrease.

Same end connection



Opposite ends connection

Installation measures PURMO Monclac -brackets

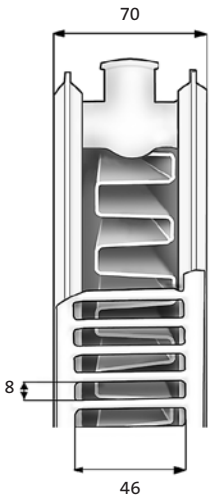


C/C = Radiator height minus 50 mm

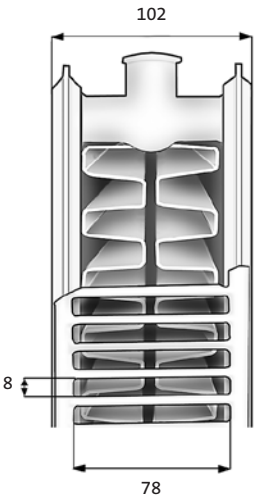
While installaing the productlabel should be towards the wall. Type 33: label from the wall.
Brackets and other installation accessories, p. 36.

Height 200 mm – Radiator types

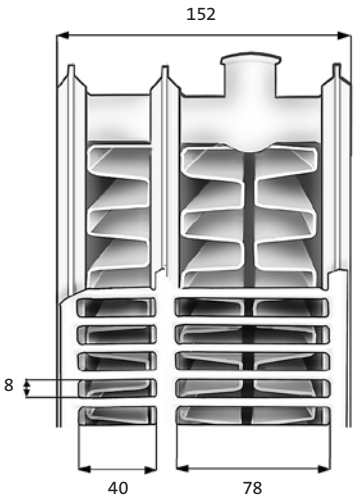
CV/FCV/FFCV 21



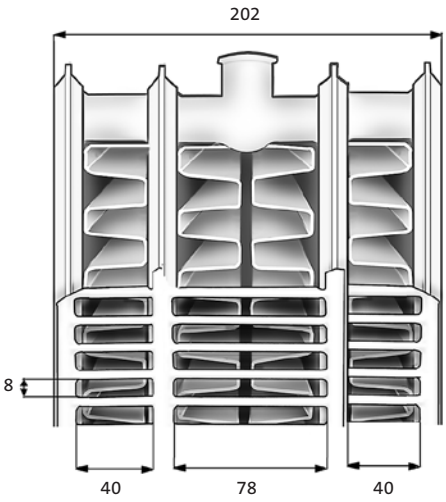
CV/FCV/FFCV 22



CV/FCV/FFCV 33



CV/FCV/FFCV 44

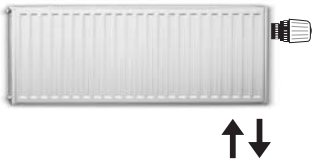


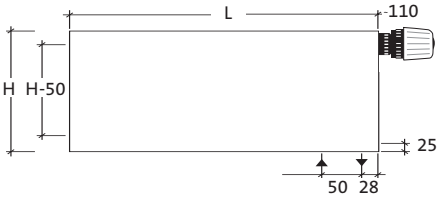
Height 200 mm – Connection

Bottom connection

The integrated valve system is welded onto the radiator during the manufacture process and is thereafter a fixed part of the radiator. All PURMO Ventil Compact radiators can be equipped with an built in valve insert and thermostatic sensor head. The valve inserts are for two types of sensor head connections: M30 x 1,5 adaptations and RA 2000 adaptation. The needed valve insert type (see pages 5– 6) should be stated in the order.

Thanks to the built in valve system, connection at the bottom is possible. Bottom right hand connection is standard, but left hand connection (type 33) is possible, if specified at time of order. Types 21, 22 and 44 are turnable.





Same end connection

Top-bottom same end connection requires external flow and return valves. The bottom connections are to be plugged.

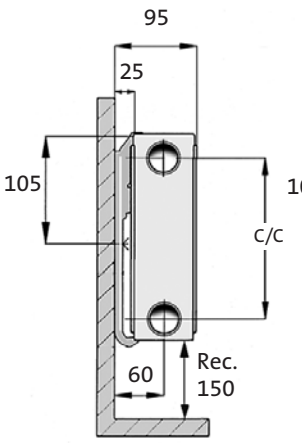
Opposite ends connection

Top-bottom opposite ends connection requires external flow and return valves. The bottom connections are to be plugged.

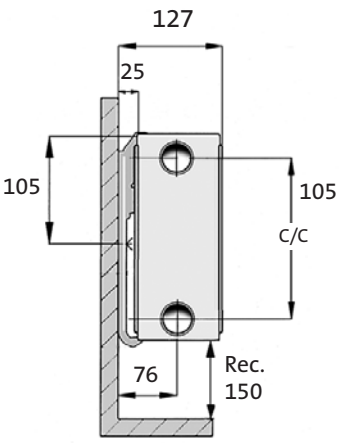
Note! The radiator must be connected as above. Faulty connections might cause a heat output decrease.

Height 200 mm – Installation measures

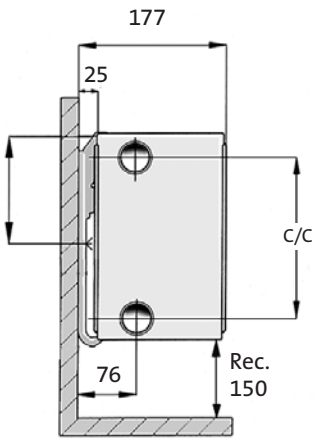
CV/FCV/FFCV 21



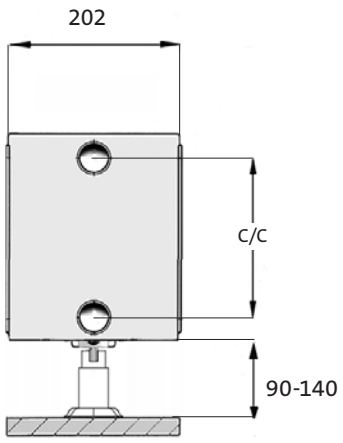
CV/FCV/FFCV 22



CV/FCV/FFCV 33



CV/FCV/FFCV 44



C/C = Radiator height minus 50 mm

For types 21, 22 and 33 wall- and floorbrackets can be used. For type 44 only floorbrackets.

Heat output calculation model – DIN 4703-3

Heat output (W / m)

$$\phi = \phi_n \times (\Delta T / \Delta T_n)^n$$

in which

ϕ = output, W/m

ϕ_n = norm output, W/m – EN 442

when the logarhitmic excess temperature

$\Delta T_n = 49{,}83$ K

ΔT = logarhitmic excess temperature, K

ΔT_n = norm excess temperature = 49,83 K

n = temperature exponent

The norm outputs ϕ_n and temperature exponents n can be found in the heat output tabels.

$$\Delta T = \frac{t_{in} - t_{out}}{\ln((t_{in} - t_{room}) / (t_{out} - t_{room}))}$$

in which

t_{in} = flow water,°C

t_{out} = return water,°C

t_{room} = room temperature,°C

The heat output values can be calculated with the output simulator on the website www.purmo.fi

Logarhitmic excess temperature:

e.g. $t_{in}/t_{out}/t_{room}$

75/65/20 = 49,83 K

70/40/20 = 32,74 K

Height 200 mm	Radiator-type	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume-litre
CV 21 ϕ_n = 550 W/m n = 1,3009	CV 21	600	5434602	191	98	7,1	1,4
	CV 21	700	5434603	223	114	8,3	1,7
	CV 21	800	5434604	255	130	9,4	1,9
	CV 21	900	5434605	287	147	10,6	2,2
	CV 21	1 000	5434606	318	163	11,8	2,4
	CV 21	1 100	5434607	350	179	13,0	2,6
	CV 21	1 200	5434608	382	196	14,2	2,9
	CV 21	1 400	5434609	446	228	16,5	3,4
	CV 21	1 600	5434610	510	261	18,9	3,8
	CV 21	1 800	5434611	573	294	21,2	4,3
	CV 21	2 000	5434612	637	326	23,6	4,8
	CV 21	2 300	5434613	732	375	27,1	5,5
	CV 21	2 600	5434614	828	424	30,7	6,2
	CV 21	3 000	5434615	955	489	35,4	7,2
CV 22 ϕ_n = 689 W/m n = 1,3077	CV 22	600	5434622	239	122	7,7	1,5
	CV 22	700	5434623	278	142	9,0	1,8
	CV 22	800	5434624	318	162	10,2	2,0
	CV 22	900	5434625	358	183	11,5	2,3
	CV 22	1 000	5434626	398	203	12,8	2,5
	CV 22	1 100	5434627	438	223	14,1	2,8
	CV 22	1 200	5434628	477	244	15,4	3,0
	CV 22	1 400	5434629	557	284	17,9	3,5
	CV 22	1 600	5434630	636	325	20,5	4,0
	CV 22	1 800	5434631	716	365	23,0	4,5
	CV 22	2 000	5434632	796	406	25,6	5,0
	CV 22	2 300	5434633	915	467	29,4	5,8
	CV 22	2 600	5434634	1 034	528	33,3	6,5
	CV 22	3 000	5434635	1 193	609	38,4	7,5
CV 33 ϕ_n = 950 W/m n = 1,3038	CV 33	600	5434642	330	169	11,3	2,2
	CV 33	700	5434643	385	197	13,2	2,6
	CV 33	800	5434644	440	225	15,1	3,0
	CV 33	900	5434645	494	253	17,0	3,3
	CV 33	1 000	5434646	549	281	18,9	3,7
	CV 33	1 100	5434647	604	309	20,8	4,1
	CV 33	1 200	5434648	659	337	22,7	4,4
	CV 33	1 400	5434649	769	393	26,5	5,2
	CV 33	1 600	5434650	879	450	30,2	5,9
	CV 33	1 800	5434651	989	506	34,0	6,7
	CV 33	2 000	5434652	1 099	562	37,8	7,4
	CV 33	2 300	5434653	1 264	646	43,5	8,5
	CV 33	2 600	5434654	1 428	731	49,1	9,6
	CV 33	3 000	5434655	1 648	843	56,7	11,1
CV 44 ϕ_n = 1 253 W/m n = 1,2948	CV 44	600	5434662	436	224	13,7	2,9
	CV 44	700	5434663	509	262	16,0	3,4
	CV 44	800	5434664	582	299	18,3	3,9
	CV 44	900	5434665	655	336	20,6	4,4
	CV 44	1 000	5434666	727	374	22,9	4,9
	CV 44	1 100	5434667	800	411	25,2	5,4
	CV 44	1 200	5434668	873	448	27,5	5,9
	CV 44	1 400	5434669	1 018	523	32,1	6,9
	CV 44	1 600	5434670	1 164	598	36,6	7,8
	CV 44	1 800	5434671	1 309	673	41,2	8,8
	CV 44	2 000	5434672	1 455	747	45,8	9,8
	CV 44	2 300	5434673	1 673	860	52,7	11,3
	CV 44	2 600	5434674	1 891	972	59,5	12,7
	CV 44	3 000	5434675	2 182	1 121	68,7	14,7

Height 300 mm	Radiator-type	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume-litre
C 11 ϕ_n = 546 W/m n = 1,2981	C 11	400	5418202	127	65	3,6	0,7
	C 11	500	5418203	158	81	4,5	0,8
	C 11	600	5418204	190	97	5,5	1,0
	C 11	700	5418205	222	114	6,4	1,1
	C 11	800	5418206	253	130	7,3	1,3
	C 11	900	5418207	285	146	8,2	1,5
	C 11	1 000	5418208	317	162	9,1	1,6
	C 11	1 100	5418209	348	179	10,0	1,8
	C 11	1 200	5418210	380	195	10,9	2,0
	C 11	1 400	5418212	443	227	12,7	2,3
	C 11	1 600	5418213	506	260	14,5	2,6
	C 11	1 800	5418214	570	292	16,4	3,0
	C 11	2 000	5418215	633	325	18,2	3,3
	C 11	2 300	5418216	728	373	20,9	3,8
	C 11	2 600	5418217	823	422	23,6	4,3
	C 11	3 000	5418218	950	487	27,3	4,9
C 21 ϕ_n = 761 W/m n = 1,2803	C 21	400	5418402	178	92	5,6	1,3
	C 21	500	5418403	222	115	7,0	1,7
	C 21	600	5418404	267	138	8,4	2,0
	C 21	700	5418405	311	161	9,8	2,3
	C 21	800	5418406	356	184	11,2	2,6
	C 21	900	5418407	400	207	12,6	3,0
	C 21	1 000	5418408	444	230	14,0	3,3
	C 21	1 100	5418409	489	253	15,4	3,6
	C 21	1 200	5418410	533	276	16,8	4,0
	C 21	1 400	5418412	622	322	19,6	4,6
	C 21	1 600	5418413	711	368	22,4	5,3
	C 21	1 800	5418414	800	414	25,2	5,9
	C 21	2 000	5418415	889	460	28,0	6,6
	C 21	2 300	5418416	1 022	529	32,2	7,6
	C 21	2 600	5418417	1 156	598	36,4	8,6
	C 21	3 000	5418418	1 333	690	42,0	9,9
C 22 ϕ_n = 961 W/m n = 1,3094	C 22	400	5418602	222	113	6,5	1,4
	C 22	500	5418603	277	141	8,2	1,7
	C 22	600	5418604	333	170	9,8	2,0
	C 22	700	5418605	388	198	11,4	2,4
	C 22	800	5418606	444	226	13,0	2,7
	C 22	900	5418607	499	254	14,7	3,1
	C 22	1 000	5418608	554	283	16,3	3,4
	C 22	1 100	5418609	610	311	17,9	3,7
	C 22	1 200	5418610	665	339	19,6	4,1
	C 22	1 400	5418612	776	396	22,8	4,8
	C 22	1 600	5418613	887	452	26,1	5,4
	C 22	1 800	5418614	998	509	29,3	6,1
	C 22	2 000	5418615	1 109	565	32,6	6,8
	C 22	2 300	5418616	1 275	650	37,5	7,8
	C 22	2 600	5418617	1 442	735	42,4	8,8
	C 22	3 000	5418618	1 663	848	48,9	10,2
C 33 ϕ_n = 1 347 W/m n = 1,3140	C 33	400	5418802	310	158	9,8	2,0
	C 33	500	5418803	388	197	12,3	2,6
	C 33	600	5418804	465	237	14,7	3,1
	C 33	700	5418805	543	276	17,2	3,6
	C 33	800	5418806	621	316	19,6	4,1
	C 33	900	5418807	698	355	22,1	4,6
	C 33	1 000	5418808	776	395	24,5	5,1
	C 33	1 100	5418809	853	434	27,0	5,6
	C 33	1 200	5418810	931	474	29,4	6,1
	C 33	1 400	5418812	1 086	552	34,3	7,1
	C 33	1 600	5418813	1 241	631	39,2	8,2
	C 33	1 800	5418814	1 396	710	44,1	9,2
	C 33	2 000	5418815	1 551	789	49,0	10,2
	C 33	2 300	5418816	1 784	908	56,4	11,7
	C 33	2 600	5418817	2 017	1 026	63,7	13,3
	C 33	3 000	5418818	2 327	1 184	73,5	15,3

Height 400 mm	Radiator-type	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume-litre
C 11 ϕ_n = 711 W/m n = 1,3026	C 11	400	5418222	165	84	4,9	0,9
	C 11	500	5418223	206	105	6,1	1,1
	C 11	600	5418224	247	126	7,4	1,3
	C 11	700	5418225	288	147	8,6	1,5
	C 11	800	5418226	329	168	9,8	1,7
	C 11	900	5418227	370	189	11,1	1,9
	C 11	1 000	5418228	411	211	12,3	2,1
	C 11	1 100	5418229	453	232	13,5	2,3
	C 11	1 200	5418230	494	253	14,7	2,6
	C 11	1 400	5418232	576	295	17,2	3,0
	C 11	1 600	5418233	658	337	19,7	3,4
	C 11	1 800	5418234	740	379	22,1	3,8
	C 11	2 000	5418235	823	421	24,6	4,3
	C 11	2 300	5418236	946	484	28,3	4,9
	C 11	2 600	5418237	1 070	547	32,0	5,5
	C 11	3 000	5418238	1 234	632	36,9	6,4
C 21 ϕ_n = 963 W/m n = 1,2940	C 21	400	5418422	224	115	7,5	1,7
	C 21	500	5418423	280	144	9,4	2,2
	C 21	600	5418424	336	172	11,3	2,6
	C 21	700	5418425	391	201	13,1	3,1
	C 21	800	5418426	447	230	15,0	3,5
	C 21	900	5418427	503	259	16,9	3,9
	C 21	1 000	5418428	559	287	18,8	4,4
	C 21	1 100	5418429	615	316	20,6	4,8
	C 21	1 200	5418430	671	345	22,5	5,2
	C 21	1 400	5418432	783	402	26,3	6,1
	C 21	1 600	5418433	895	460	30,0	7,0
	C 21	1 800	5418434	1 007	517	33,8	7,9
	C 21	2 000	5418435	1 118	575	37,5	8,7
	C 21	2 300	5418436	1 286	661	43,2	10,1
	C 21	2 600	5418437	1 454	747	48,8	11,4
	C 21	3 000	5418438	1 678	862	56,3	13,1
C 22 ϕ_n = 1 221 W/m n = 1,3182	C 22	400	5418622	281	143	8,8	1,8
	C 22	500	5418623	351	178	11,0	2,2
	C 22	600	5418624	421	214	13,2	2,7
	C 22	700	5418625	491	249	15,4	3,1
	C 22	800	5418626	561	285	17,6	3,6
	C 22	900	5418627	632	321	19,8	4,0
	C 22	1 000	5418628	702	356	22,0	4,5
	C 22	1 100	5418629	772	392	24,2	4,9
	C 22	1 200	5418630	842	428	26,4	5,4
	C 22	1 400	5418632	983	499	30,8	6,3
	C 22	1 600	5418633	1 123	570	35,2	7,2
	C 22	1 800	5418634	1 263	641	39,6	8,0
	C 22	2 000	5418635	1 404	713	44,0	8,9
	C 22	2 300	5418636	1 614	819	50,6	10,3
	C 22	2 600	5418637	1 825	926	57,2	11,6
	C 22	3 000	5418638	2 106	1 069	66,0	13,4
C 33 ϕ_n = 1 699 W/m n = 1,3255	C 33	400	5418822	389	197	13,2	2,7
	C 33	500	5418823	487	246	16,5	3,3
	C 33	600	5418824	584	295	19,8	4,0
	C 33	700	5418825	682	345	23,1	4,7
	C 33	800	5418826	779	394	26,5	5,3
	C 33	900	5418827	876	443	29,8	6,0
	C 33	1 000	5418828	974	492	33,1	6,7
	C 33	1 100	5418829	1 071	542	36,4	7,3
	C 33	1 200	5418830	1 168	591	39,7	8,0
	C 33	1 400	5418832	1 363	689	46,3	9,3
	C 33	1 600	5418833	1 558	788	52,9	10,7
	C 33	1 800	5418834	1 752	886	59,5	12,0
	C 33	2 000	5418835	1 947	985	66,1	13,3
	C 33	2 300	5418836	2 239	1 133	76,1	15,3
	C 33	2 600	5418837	2 531	1 280	86,0	17,3
	C 33	3 000	5418838	2 921	1 477	99,2	20,0

Height 450 mm	Radiator-type	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume-litre
C 11 ϕ_n = 790 W/m n = 1,3048	C 11	400	5418242	183	93	5,6	1,0
	C 11	500	5418243	228	117	7,0	1,2
	C 11	600	5418244	274	140	8,3	1,5
	C 11	700	5418245	320	163	9,7	1,7
	C 11	800	5418246	365	187	11,1	1,9
	C 11	900	5418247	411	210	12,5	2,2
	C 11	1 000	5418248	457	233	13,9	2,4
	C 11	1 100	5418249	502	257	15,3	2,7
	C 11	1 200	5418250	548	280	16,7	2,9
	C 11	1 400	5418252	639	327	19,5	3,4
	C 11	1 600	5418253	731	373	22,2	3,9
	C 11	1 800	5418254	822	420	25,0	4,4
	C 11	2 000	5418255	913	467	27,8	4,8
	C 11	2 300	5418256	1 050	537	32,0	5,6
	C 11	2 600	5418257	1 187	607	36,1	6,3
	C 11	3 000	5418258	1 370	700	41,7	7,3
C 21 ϕ_n = 1 060 W/m n = 1,3008	C 21	400	5418442	246	126	8,5	2,0
	C 21	500	5418443	307	157	10,6	2,5
	C 21	600	5418444	368	189	12,7	2,9
	C 21	700	5418445	430	220	14,8	3,4
	C 21	800	5418446	491	252	16,9	3,9
	C 21	900	5418447	552	283	19,0	4,4
	C 21	1 000	5418448	614	314	21,2	4,9
	C 21	1 100	5418449	675	346	23,3	5,4
	C 21	1 200	5418450	737	377	25,4	5,9
	C 21	1 400	5418452	859	440	29,6	6,9
	C 21	1 600	5418453	982	503	33,8	7,8
	C 21	1 800	5418454	1 105	566	38,1	8,8
	C 21	2 000	5418455	1 228	629	42,3	9,8
	C 21	2 300	5418456	1 412	723	48,6	11,3
	C 21	2 600	5418457	1 596	817	55,0	12,7
	C 21	3 000	5418458	1 841	943	63,5	14,7
C 22 ϕ_n = 1 347 W/m n = 1,3226	C 22	400	5418642	309	157	9,9	2,0
	C 22	500	5418643	386	196	12,4	2,5
	C 22	600	5418644	464	235	14,9	3,0
	C 22	700	5418645	541	274	17,4	3,5
	C 22	800	5418646	618	313	19,9	4,0
	C 22	900	5418647	696	352	22,4	4,5
	C 22	1 000	5418648	773	391	24,9	5,0
	C 22	1 100	5418649	850	431	27,3	5,5
	C 22	1 200	5418650	927	470	29,8	6,0
	C 22	1 400	5418652	1 082	548	34,8	7,0
	C 22	1 600	5418653	1 237	626	39,8	8,0
	C 22	1 800	5418654	1 391	705	44,7	9,0
	C 22	2 000	5418655	1 546	783	49,7	10,0
	C 22	2 300	5418656	1 778	900	57,2	11,5
	C 22	2 600	5418657	2 009	1 018	64,6	13,0
	C 22	3 000	5418658	2 319	1 174	74,6	15,0
C 33 ϕ_n = 1 869 W/m n = 1,3313	C 33	400	5418842	427	215	14,9	3,0
	C 33	500	5418843	534	269	18,7	3,7
	C 33	600	5418844	641	323	22,4	4,5
	C 33	700	5418845	748	377	26,1	5,2
	C 33	800	5418846	855	431	29,9	6,0
	C 33	900	5418847	962	485	33,6	6,7
	C 33	1 000	5418848	1 068	539	37,4	7,5
	C 33	1 100	5418849	1 175	593	41,1	8,2
	C 33	1 200	5418850	1 282	646	44,8	8,9
	C 33	1 400	5418852	1 496	754	52,3	10,4
	C 33	1 600	5418853	1 709	862	59,8	11,9
	C 33	1 800	5418854	1 923	970	67,2	13,4
	C 33	2 000	5418855	2 137	1 077	74,7	14,9
	C 33	2 300	5418856	2 457	1 239	85,9	17,1
	C 33	2 600	5418857	2 778	1 401	97,1	19,4
	C 33	3 000	5418858	3 205	1 616	112,1	22,4

Height 500 mm	Radiator-type	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume-litre
C 11 ϕ_n = 868 W/m n = 1,3070	C 11	400	5418262	201	102	6,2	1,1
	C 11	500	5418263	251	128	7,8	1,3
	C 11	600	5418264	301	154	9,3	1,6
	C 11	700	5418265	351	179	10,9	1,9
	C 11	800	5418266	401	205	12,4	2,1
	C 11	900	5418267	451	230	14,0	2,4
	C 11	1 000	5418268	501	256	15,5	2,7
	C 11	1 100	5418269	551	282	17,1	2,9
	C 11	1 200	5418270	602	307	18,6	3,2
	C 11	1 400	5418272	702	358	21,7	3,8
	C 11	1 600	5418273	802	410	24,8	4,3
	C 11	1 800	5418274	902	461	27,9	4,8
	C 11	2 000	5418275	1 003	512	31,0	5,4
	C 11	2 300	5418276	1 153	589	35,7	6,2
	C 11	2 600	5418277	1 303	665	40,3	7,0
	C 11	3 000	5418278	1 504	768	46,5	8,0
C 21 ϕ_n = 1 156 W/m n = 1,3076	C 21	400	5418462	267	136	9,4	2,2
	C 21	500	5418463	334	170	11,8	2,7
	C 21	600	5418464	400	204	14,1	3,3
	C 21	700	5418465	467	238	16,5	3,8
	C 21	800	5418466	534	273	18,8	4,3
	C 21	900	5418467	601	307	21,2	4,9
	C 21	1 000	5418468	667	341	23,5	5,4
	C 21	1 100	5418469	734	375	25,9	6,0
	C 21	1 200	5418470	801	409	28,2	6,5
	C 21	1 400	5418472	934	477	32,9	7,6
	C 21	1 600	5418473	1 068	545	37,6	8,7
	C 21	1 800	5418474	1 201	613	42,4	9,8
	C 21	2 000	5418475	1 335	681	47,1	10,9
	C 21	2 300	5418476	1 535	784	54,1	12,5
	C 21	2 600	5418477	1 735	886	61,2	14,1
	C 21	3 000	5418478	2 002	1 022	70,6	16,3
C 22 ϕ_n = 1 470 W/m n = 1,3270	C 22	400	5418662	337	170	11,1	2,2
	C 22	500	5418663	421	213	13,9	2,8
	C 22	600	5418664	505	255	16,6	3,3
	C 22	700	5418665	589	298	19,4	3,9
	C 22	800	5418666	673	340	22,2	4,4
	C 22	900	5418667	758	383	24,9	5,0
	C 22	1 000	5418668	842	425	27,7	5,5
	C 22	1 100	5418669	926	468	30,5	6,1
	C 22	1 200	5418670	1 010	511	33,2	6,6
	C 22	1 400	5418672	1 179	596	38,8	7,7
	C 22	1 600	5418673	1 347	681	44,3	8,8
	C 22	1 800	5418674	1 515	766	49,9	10,0
	C 22	2 000	5418675	1 684	851	55,4	11,1
	C 22	2 300	5418676	1 936	979	63,7	12,7
	C 22	2 600	5418677	2 189	1 106	72,0	14,4
	C 22	3 000	5418678	2 526	1 276	83,1	16,6
C 33 ϕ_n = 2 035 W/m n = 1,3371	C 33	400	5418862	464	233	16,7	3,3
	C 33	500	5418863	580	292	20,8	4,1
	C 33	600	5418864	696	350	25,0	4,9
	C 33	700	5418865	812	408	29,1	5,8
	C 33	800	5418866	928	467	33,3	6,6
	C 33	900	5418867	1 044	525	37,5	7,4
	C 33	1 000	5418868	1 160	583	41,6	8,2
	C 33	1 100	5418869	1 277	642	45,8	9,1
	C 33	1 200	5418870	1 393	700	50,0	9,9
	C 33	1 400	5418872	1 625	817	58,3	11,5
	C 33	1 600	5418873	1 857	933	66,6	13,2
	C 33	1 800	5418874	2 089	1 050	74,9	14,8
	C 33	2 000	5418875	2 321	1 167	83,3	16,5
	C 33	2 300	5418876	2 669	1 342	95,7	18,9
	C 33	2 600	5418877	3 017	1 517	108,2	21,4
	C 33	3 000	5418878	3 481	1 750	124,9	24,7

Height 600 mm	Radiator-type	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume-litre
C 11 ϕ_n = 1 018 W/m n = 1,3115	C 11	400	5418282	235	120	7,5	1,3
	C 11	500	5418283	293	149	9,4	1,6
	C 11	600	5418284	352	179	11,2	1,9
	C 11	700	5418285	411	209	13,1	2,2
	C 11	800	5418286	469	239	15,0	2,6
	C 11	900	5418287	528	269	16,8	2,9
	C 11	1 000	5418288	587	299	18,7	3,2
	C 11	1 100	5418289	645	329	20,6	3,5
	C 11	1 200	5418290	704	359	22,4	3,8
	C 11	1 400	5418292	822	418	26,2	4,5
	C 11	1 600	5418293	939	478	29,9	5,1
	C 11	1 800	5418294	1 056	538	33,7	5,8
	C 11	2 000	5418295	1 174	598	37,4	6,4
	C 11	2 300	5418296	1 350	688	43,0	7,4
	C 11	2 600	5418297	1 526	777	48,6	8,3
	C 11	3 000	5418298	1 760	897	56,1	9,6
C 21 ϕ_n = 1 340 W/m n = 1,3213	C 21	400	5418482	308	156	10,4	2,6
	C 21	500	5418483	385	195	13,0	3,3
	C 21	600	5418484	462	234	15,6	3,9
	C 21	700	5418485	538	273	18,1	4,6
	C 21	800	5418486	615	312	20,7	5,2
	C 21	900	5418487	692	351	23,3	5,9
	C 21	1 000	8418488	769	390	25,9	6,5
	C 21	1 100	5418489	846	429	28,5	7,2
	C 21	1 200	5418490	923	468	31,1	7,8
	C 21	1 400	5418492	1 077	546	36,3	9,1
	C 21	1 600	5418493	1 231	624	41,5	10,4
	C 21	1 800	5418494	1 385	702	46,7	11,7
	C 21	2 000	5418495	1 538	780	51,8	13,0
	C 21	2 300	5418496	1 769	897	59,6	15,0
	C 21	2 600	5418497	2 000	1 014	67,4	16,9
	C 21	3 000	5418498	2 308	1 170	77,8	19,5
C 22 ϕ_n = 1 709 W/m n = 1,3358	C 22	400	5418682	390	196	13,4	2,6
	C 22	500	5418683	488	245	16,7	3,3
	C 22	600	5418684	585	294	20,0	4,0
	C 22	700	5418685	683	343	23,4	4,6
	C 22	800	5418686	780	392	26,7	5,3
	C 22	900	5418687	878	442	30,1	5,9
	C 22	1 000	8418688	975	491	33,4	6,6
	C 22	1 100	5418689	1 073	540	36,7	7,3
	C 22	1 200	5418690	1 170	589	40,1	7,9
	C 22	1 400	5418692	1 365	687	46,8	9,2
	C 22	1 600	5418693	1 560	785	53,4	10,6
	C 22	1 800	5418694	1 755	883	60,1	11,9
	C 22	2 000	5418695	1 950	981	66,8	13,2
	C 22	2 300	5418696	2 243	1 128	76,8	15,2
	C 22	2 600	5418697	2 535	1 275	86,8	17,2
	C 22	3 000	5418698	2 925	1 472	100,2	19,8
C 33 ϕ_n = 2 356 W/m n = 1,3486	C 33	400	5418882	535	267	20,1	3,9
	C 33	500	5418883	669	334	25,1	4,9
	C 33	600	5418884	802	401	30,1	5,9
	C 33	700	5418885	936	468	35,1	6,9
	C 33	800	5418886	1 070	535	40,2	7,8
	C 33	900	5418887	1 203	601	45,2	8,8
	C 33	1 000	5418888	1 337	668	50,2	9,8
	C 33	1 100	5418889	1 471	735	55,2	10,8
	C 33	1 200	5418890	1 604	802	60,2	11,8
	C 33	1 400	5418892	1 872	936	70,3	13,7
	C 33	1 600	5418893	2 139	1 069	80,3	15,7
	C 33	1 800	5418894	2 407	1 203	90,4	17,6
	C 33	2 000	5418895	2 674	1 336	100,4	19,6
	C 33	2 300	5418896	3 075	1 537	115,5	22,5
	C 33	2 600	5418897	3 476	1 737	130,5	25,5
	C 33	3 000	5418898	4 011	2 005	150,6	29,4

Height 900 mm	Radiator-type	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume-litre
C 11	C 11	400	5418302	328	167	11,3	1,8
ϕ_n = 1 427 W/m	C 11	500	5418303	410	208	14,2	2,3
n = 1,3170	C 11	600	5418304	492	250	17,0	2,7
	C 11	700	5418305	574	292	19,8	3,2
	C 11	800	5418306	657	333	22,6	3,6
	C 11	900	5418307	739	375	25,5	4,1
	C 11	1 000	5418308	821	417	28,3	4,5
	C 11	1 100	5418309	903	459	31,1	5,0
	C 11	1 200	5418310	985	500	34,0	5,4
	C 11	1 400	5418312	1 149	584	39,6	6,3
	C 11	1 600	5418313	1 313	667	45,3	7,2
	C 11	1 800	5418314	1 477	750	50,9	8,1
	C 11	2 000	5418315	1 641	834	56,6	9,0
	C 11	2 300	5418316	1 888	959	65,1	10,4
	C 11	2 600	5418317	2 134	1 084	73,6	11,7
	C 11	3 000	5418318	2 462	1 251	84,9	13,5
C 21	C 21	400	5418502	424	213	16,9	3,6
ϕ_n = 1 861 W/m	C 21	500	5418503	530	266	21,2	4,5
n = 1,3390	C 21	600	5418504	636	320	25,4	5,4
	C 21	700	5418505	742	373	29,6	6,3
	C 21	800	5418506	848	426	33,8	7,2
	C 21	900	5418507	954	479	38,1	8,1
	C 21	1 000	5418508	1 060	533	42,3	9,0
	C 21	1 100	5418509	1 166	586	46,5	9,9
	C 21	1 200	5418510	1 272	639	50,8	10,8
	C 21	1 400	5418512	1 485	746	59,2	12,6
	C 21	1 600	5418513	1 697	852	67,7	14,4
	C 21	1 800	5418514	1 909	959	76,1	16,2
	C 21	2 000	5418515	2 121	1 065	84,6	18,0
	C 21	2 300	5418516	2 439	1 225	97,3	20,7
	C 21	2 600	5418517	2 757	1 385	110,0	23,4
	C 21	3 000	5418518	3 181	1 598	126,9	27,0
C 22	C 22	400	5418702	540	269	20,3	3,6
ϕ_n = 2 338 W/m	C 22	500	5418703	675	336	25,4	4,5
n = 1,3358	C 22	600	5418704	811	404	30,4	5,4
	C 22	700	5418705	946	471	35,5	6,3
	C 22	800	5418706	1 081	538	40,6	7,2
	C 22	900	5418707	1 216	605	45,6	8,1
	C 22	1 000	5418708	1 351	673	50,7	9,0
	C 22	1 100	5418709	1 486	740	55,8	9,9
	C 22	1 200	5418710	1 621	807	60,8	10,8
	C 22	1 400	5418712	1 891	942	71,0	12,6
	C 22	1 600	5418713	2 162	1 076	81,1	14,4
	C 22	1 800	5418714	2 432	1 211	91,3	16,2
	C 22	2 000	5418715	2 702	1 345	101,4	18,0
	C 22	2 300	5418716	3 107	1 547	116,6	20,7
	C 22	2 600	5418717	3 513	1 749	131,8	23,4
	C 22	3 000	5418718	4 053	2 018	152,1	27,0
C 33	C 33	400	5418902	737	366	24,2	4,2
ϕ_n = 3 260 W/m	C 33	500	5418903	921	457	30,3	5,3
n = 1,3600	C 33	600	5418904	1 105	549	36,4	6,4
	C 33	700	5418905	1 289	640	42,4	7,4
	C 33	800	5418906	1 473	732	48,5	8,5
	C 33	900	5418907	1 657	823	54,5	9,5
	C 33	1 000	5418908	1 841	915	60,6	10,6
	C 33	1 100	5418909	2 025	1 006	66,7	11,7
	C 33	1 200	5418910	2 210	1 098	72,7	12,7
	C 33	1 400	5418912	2 578	1 281	84,8	14,8
	C 33	1 600	5418913	2 946	1 464	97,0	17,0
	C 33	1 800	5418914	3 314	1 647	109,1	19,1
	C 33	2 000	5418915	3 683	1 830	121,2	21,2
	C 33	2 300	5418916	4 235	2 104	139,4	24,4
	C 33	2 600	5418917	4 787	2 379	157,6	27,6
	C 33	3 000	5418918	5 524	2 745	181,8	31,8

PURMO Hygiene

Technical data

Construction	EN 442-1
Material	Cold rolled steelplate EN 10130
Surface treatment	Surface treatment in five steps: • Alkalic degreased • Phosphated • Dipped in primer (electrical); KAT • Coated with polyester-epoxy resin powder • Stoved (about 200°C) The surface treatment process follows the standard DIN 55900.
Standard colour	White, RAL 9016. Other colours p. 79
Working pressure	10 bar
Connections	4 side connections 1/2" ISO 228
Certification	SFS-EN ISO 9001 and ISO 14001
Height	300, 400, 500 and 600 mm
Length	400–3 000 mm
Types	H 10, single panel H 20, double panel H 30, triple panel

PURMO Hygiene is delivered without convection plates, side panels and top grille. All PURMO radiators are intended for closed heating systems.

Radiator types

H 10

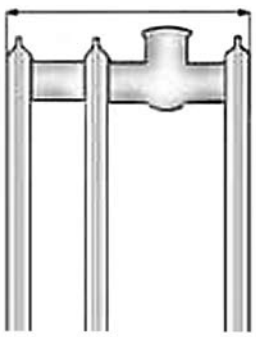
57

H 20

102

H 30

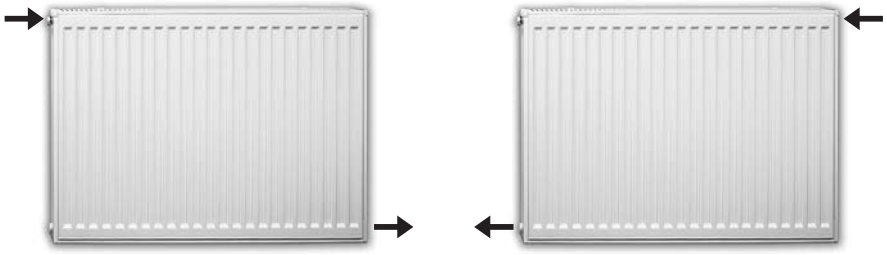
152



Connection

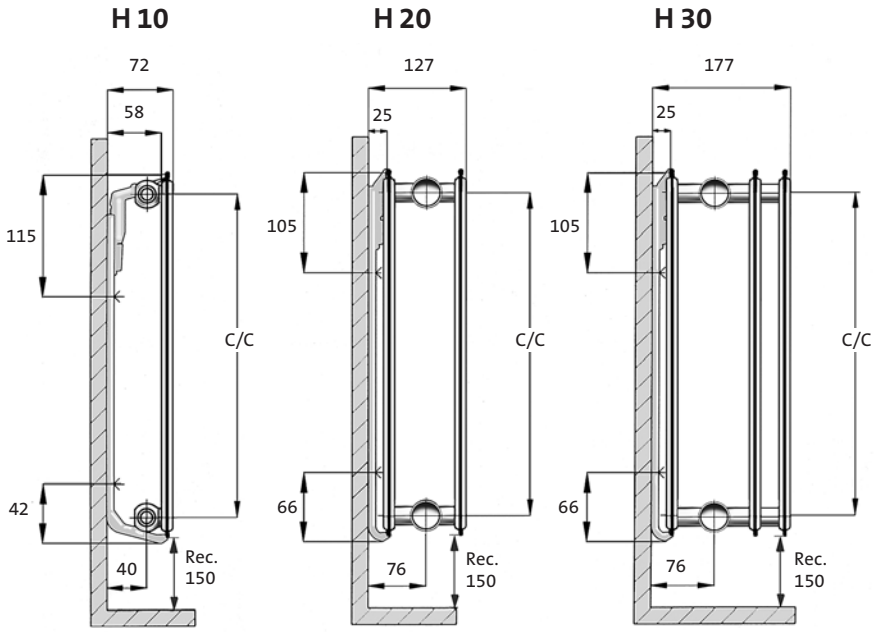
Note!
The radiator must be connected as above. Faulty connections might cause a heat output decrease.

Same end connection



Opposite ends connection

Installation measures PURMO Monclac -brackets



C/C = Radiator height minus 50 mm

While installaing the productlabel should be towards the wall. Type 33: label from the wall.
Brackets and other installation accessories, p. 36.

Heat output calculation model – DIN 4703-3

Heat output (W / m)

$$\phi = \phi_n \times (\Delta T / \Delta T_n)^n$$

in which

ϕ = output, W/m

ϕ_n = norm output, W/m – EN 442

when the logarhitmic excess temperature

ΔT_n = 49,83 K

ΔT = logarhitmic excess temperature, K

ΔT_n = norm excess temperature = 49,83 K

n = temperature exponent

The norm outputs ϕ_n and temperature exponents n can be found in the heat output tabels.

$$\Delta T = \frac{t_{in} - t_{out}}{\ln((t_{in} - t_{room}) / (t_{out} - t_{room}))}$$

in which

t_{in} = flow water,°C

t_{out} = return water,°C

t_{room} = room temperature,°C

The heat output values can be calculated with the output simulator on the website www.purmo.fi

Logarhitmic excess temperature:

e.g. $t_{in}/t_{out}/t_{room}$

75/65/20 = 49,83 K

70/40/20 = 32,74 K

Height 300 mm	Radiator-type	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume litre
H 10 ϕ_n = 348 W/m n = 1,3425	H10	400	5418002	79	40	2,4	0,7
	H10	500	5418003	99	50	2,9	0,8
	H10	600	5418004	119	60	3,5	1,0
	H10	700	5418005	139	69	4,1	1,2
	H10	800	5418006	158	79	4,7	1,4
	H10	900	5418007	178	89	5,3	1,5
	H10	1 000	5418008	198	99	5,9	1,7
	H10	1 100	5418009	218	109	6,5	1,9
	H10	1 200	5418010	238	119	7,1	2,0
	H10	1 400	5418012	277	139	8,2	2,4
	H10	1 600	5418013	317	159	9,4	2,7
	H10	1 800	5418014	356	179	10,6	3,0
	H10	2 000	5418015	396	199	11,8	3,4
H 20 ϕ_n = 630 W/m n = 1,2815	H20	400	–	147	76	4,7	1,4
	H20	500	–	184	95	5,9	1,8
	H20	600	–	221	114	7,1	2,1
	H20	700	–	257	133	8,3	2,5
	H20	800	–	294	152	9,4	2,8
	H20	900	–	331	171	10,6	3,2
	H20	1 000	–	368	190	11,8	3,5
	H20	1 100	–	405	209	13,0	3,9
	H20	1 200	–	441	228	14,2	4,2
	H20	1 400	–	515	266	16,5	4,9
	H20	1 600	–	588	304	18,9	5,6
	H20	1 800	–	662	342	21,2	6,3
	H20	2 000	–	736	380	23,6	7,0
H 30 ϕ_n = 874 W/m n = 1,2957	H30	400	–	203	104	7,0	2,0
	H30	500	–	254	130	8,8	2,6
	H30	600	–	304	156	10,6	3,1
	H30	700	–	355	182	12,3	3,6
	H30	800	–	406	208	14,1	4,1
	H30	900	–	456	234	15,8	4,6
	H30	1 000	–	507	260	17,6	5,1
	H30	1 100	–	558	286	19,4	5,6
	H30	1 200	–	609	313	21,1	6,1
	H30	1 400	–	710	365	24,6	7,1
	H30	1 600	–	811	417	28,2	8,2
	H30	1 800	–	913	469	31,7	9,2
	H30	2 000	–	1 014	521	35,2	10,2

Height 400 mm	Radiator-type	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume litre
H 10 ϕ_n = 449 W/m n = 1,3255	H10	400	5418022	103	52	3,1	0,9
	H10	500	5418023	129	65	3,9	1,1
	H10	600	5418024	154	78	4,7	1,3
	H10	700	5418025	180	91	5,5	1,5
	H10	800	5418026	206	104	6,3	1,8
	H10	900	5418027	232	117	7,0	2,0
	H10	1 000	5418028	257	130	7,8	2,2
	H10	1 100	5418029	283	143	8,6	2,4
	H10	1 200	5418030	309	156	9,4	2,6
	H10	1 400	5418032	360	182	10,9	3,1
	H10	1 600	5418033	412	208	12,5	3,5
	H10	1 800	5418034	463	234	14,1	3,9
	H10	2 000	5418035	515	260	15,6	4,4
H 20 ϕ_n = 787 W/m n = 1,2835	H20	400	–	184	95	6,3	1,8
	H20	500	–	230	119	7,8	2,2
	H20	600	–	275	142	9,4	2,7
	H20	700	–	321	166	11,0	3,1
	H20	800	–	367	190	12,5	3,5
	H20	900	–	413	213	14,1	4,0
	H20	1 000	–	459	237	15,7	4,4
	H20	1 100	–	505	261	17,2	4,9
	H20	1 200	–	551	285	18,8	5,3
	H20	1 400	–	643	332	21,9	6,2
	H20	1 600	–	734	380	25,1	7,1
	H20	1 800	–	826	427	28,2	8,0
	H20	2 000	–	918	474	31,3	8,9
H 30 ϕ_n = 1 098 W/m n = 1,3004	H30	400	–	254	130	9,4	2,6
	H30	500	–	318	163	11,7	3,3
	H30	600	–	382	195	14,0	3,9
	H30	700	–	445	228	16,4	4,6
	H30	800	–	509	261	18,7	5,2
	H30	900	–	572	293	21,1	5,9
	H30	1 000	–	636	326	23,4	6,5
	H30	1 100	–	699	358	25,7	7,2
	H30	1 200	–	763	391	28,1	7,8
	H30	1 400	–	890	456	32,8	9,1
	H30	1 600	–	1 017	521	37,4	10,4
	H30	1 800	–	1 145	586	42,1	11,8
	H30	2 000	–	1 272	652	46,8	13,1

Height 500 mm	Radiator-type	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume litre
H 10 ϕ_n = 546 W/m n = 1,3086	H10	400	5418062	126	64	3,9	1,1
	H10	500	5418063	158	80	4,9	1,4
	H10	600	5418064	189	96	5,9	1,6
	H10	700	5418065	221	113	6,8	1,9
	H10	800	5418066	252	129	7,8	2,2
	H10	900	5418067	284	145	8,8	2,4
	H10	1 000	5418068	315	161	9,8	2,7
	H10	1 100	5418069	347	177	10,7	3,0
	H10	1 200	5418070	378	193	11,7	3,2
	H10	1 400	5418072	441	225	13,7	3,8
	H10	1 600	5418073	504	257	15,6	4,3
	H10	1 800	5418074	567	289	17,6	4,9
	H10	2 000	5418075	630	322	19,5	5,4
H 20 ϕ_n = 938 W/m n = 1,2856	H20	400	–	219	113	7,8	2,1
	H20	500	–	273	141	9,8	2,7
	H20	600	–	328	169	11,7	3,2
	H20	700	–	383	198	13,7	3,8
	H20	800	–	437	226	15,6	4,3
	H20	900	–	492	254	17,6	4,8
	H20	1 000	–	547	282	19,5	5,4
	H20	1 100	–	601	310	21,5	5,9
	H20	1 200	–	656	339	23,4	6,4
	H20	1 400	–	765	395	27,3	7,5
	H20	1 600	–	875	451	31,2	8,6
	H20	1 800	–	984	508	35,2	9,7
	H20	2 000	–	1 093	564	39,1	10,7
H 30 ϕ_n = 1 309 W/m n = 1,3051	H30	400	–	303	155	11,7	3,2
	H30	500	–	378	193	14,6	4,0
	H30	600	–	454	232	17,5	4,8
	H30	700	–	530	271	20,4	5,6
	H30	800	–	605	309	23,4	6,4
	H30	900	–	681	348	26,3	7,2
	H30	1 000	–	757	387	29,2	8,0
	H30	1 100	–	832	425	32,1	8,8
	H30	1 200	–	908	464	35,0	9,6
	H30	1 400	–	1 059	541	40,9	11,2
	H30	1 600	–	1 211	619	46,7	12,8
	H30	1 800	–	1 362	696	52,6	14,3
	H30	2 000	–	1 513	773	58,4	15,9

Height 600 mm	Radiator-type	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume litre
H 10 ϕ_n = 639 W/m n = 1,2916	H10	400	5418082	149	76	4,7	1,3
	H10	500	5418083	186	96	5,9	1,6
	H10	600	5418084	223	115	7,0	1,9
	H10	700	5418085	260	134	8,2	2,2
	H10	800	5418086	297	153	9,4	2,6
	H10	900	5418087	334	172	10,5	2,9
	H10	1 000	5418088	371	191	11,7	3,2
	H10	1 100	5418089	409	210	12,9	3,5
	H10	1 200	5418090	446	229	14,0	3,8
	H10	1 400	5418092	520	268	16,4	4,5
	H10	1 600	5418093	594	306	18,7	5,1
	H10	1 800	5418094	669	344	21,1	5,8
	H10	2 000	5418095	743	382	23,4	6,4
H 20 ϕ_n = 1 085 W/m n = 1,2876	H20	400	–	253	130	9,4	2,5
	H20	500	–	316	163	11,7	3,2
	H20	600	–	379	195	14,0	3,8
	H20	700	–	442	228	16,4	4,4
	H20	800	–	505	261	18,7	5,0
	H20	900	–	569	293	21,1	5,7
	H20	1 000	–	632	326	23,4	6,3
	H20	1 100	–	695	358	25,7	6,9
	H20	1 200	–	758	391	28,1	7,6
	H20	1 400	–	884	456	32,8	8,8
	H20	1 600	–	1011	521	37,4	10,1
	H20	1 800	–	1 137	586	42,1	11,3
	H20	2 000	–	1 263	652	46,8	12,6
H 30 ϕ_n = 1 510 W/m n = 1,3098	H30	400	–	348	178	14,0	3,8
	H30	500	–	436	222	17,5	4,7
	H30	600	–	523	266	21,0	5,6
	H30	700	–	610	311	24,5	6,6
	H30	800	–	697	355	28,0	7,5
	H30	900	–	784	400	31,5	8,5
	H30	1 000	–	871	444	35,0	9,4
	H30	1 100	–	958	489	38,5	10,3
	H30	1 200	–	1 045	533	42,0	11,3
	H30	1 400	–	1 219	622	49,0	13,2
	H30	1 600	–	1 394	711	56,0	15,0
	H30	1 800	–	1 568	799	63,0	16,9
	H30	2 000	–	1 742	888	70,0	18,8

PURMO Planora

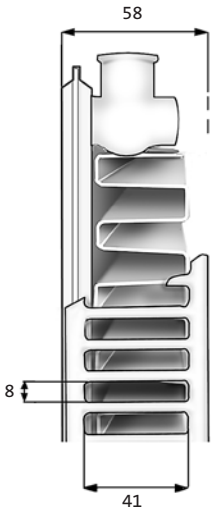
Technical data

Construction	EN 442-1
Material	Cold rolled steelplate EN 10130
Surface treatment	Surface treatment in five steps: • Alkalic degreased • Phosphated • Dipped in primer (electrical); KAT • Coated with polyester-epoxy resin powder • Stoved (about 200°C) The surface treatment process follows the standard DIN 55900.
Standard colour	White, RAL 9016. Other colours p. 79
Working pressure	7 bar
Connections	4 side connections 1/2" ISO 228 and 2 bottom connections 1/2" ISO 228-connections, distance 50 mm
Certification	SFS-EN ISO 9001 and ISO 14001
Height	300, 400, 500, 600 and 900 mm
Length	500–3 000 mm
Types	PCV 11, single panel with one convection plate PCV 21, double panel with one convection plate PCV 22, double panel with two convection plates PCV 33, triple panel with three convection plates
Accessories	The radiator package includes a 1/2" valve insert (M30).

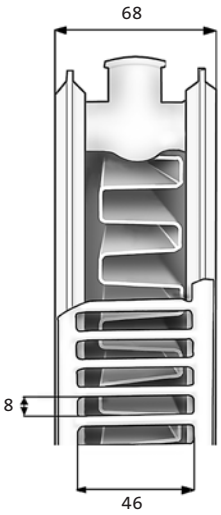
Planora is the answer to demands on modern architecture. The flat front creates a harmonic atmosphere and the integrated valve assembly enables stylish pipe connections. All PURMO radiators are intended for closed heating systems.

Radiator types

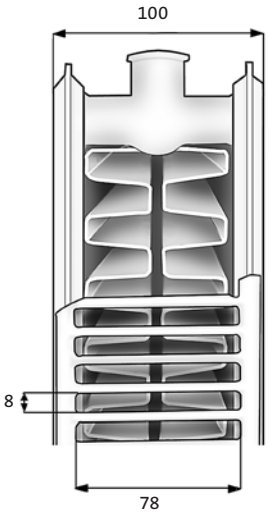
PCV 11



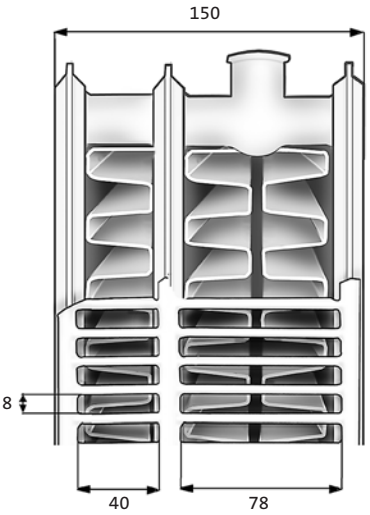
PCV 21



PCV 22



PCV 33

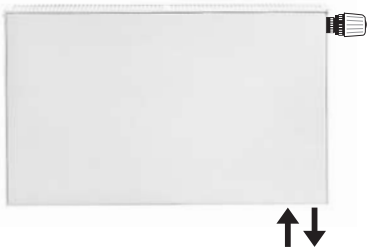


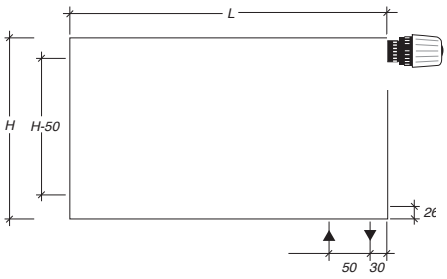
Connection

The integrated valve system is welded onto the radiator during the manufacture process and is thereafter a fixed part of the radiator.
A valve insert, PURMO M30, PURMO RD or PURMO RDF (see p. 24) is to be placed in the upper part of the valve asembly. There are R 1/2" inner threads in the valve for the pipe connection.

Bottom connection

Thanks to the built in valve system, connection at the bottom is possible.
Bottom right hand connection is standard, but left hand connection is possible, if specified at time of order.



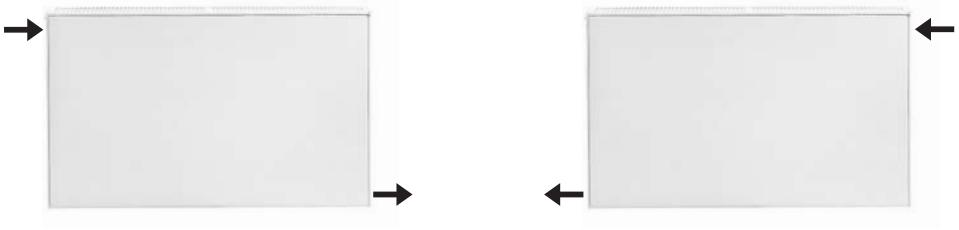


Same end connection

Top-bottom same end connection requires external flow and return valves.

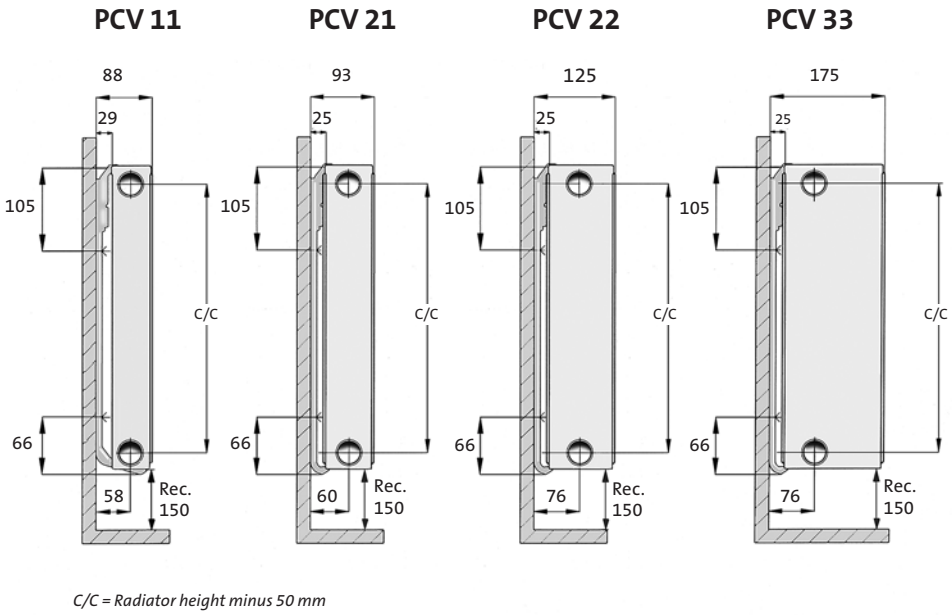
Opposite ends connection

Top-bottom opposite ends connection requires external flow and return valves.



Note! The radiator must be connected as above.
Faulty connections might cause a heat output decrease.
PURMO Planora has six possible connections. All unused connections must be plugged.

Installation measures PURMO Monclac -brackets



C/C = Radiator height minus 50 mm

At installation, product label should be towards the wall. Type 33: label towards the room.
Brackets and other installation accessories, p. 36.

Heat output calculation model – DIN 4703-3

Heat output (W / m)

$$\phi = \phi_n \times (\Delta T / \Delta T_n)^n$$

in which

ϕ = output, W/m

ϕ_n = norm output, W/m – EN 442

when the logarhitmic excess temperature

$\Delta T_n = 49{,}83$ K

ΔT = logarhitmic excess temperature, K

ΔT_n = norm excess temperature = 49,83 K

n = temperature exponent

The norm outputs ϕ_n and temperature exponents n can be found in the heat output tabels.

$$\Delta T = \frac{t_{in} - t_{out}}{\ln((t_{in} - t_{room}) / (t_{out} - t_{room}))}$$

in which

t_{in} = flow water,°C

t_{out} = return water,°C

t_{room} = room temperature,°C

The heat output values can be calculated with the output simulator on the website www.purmo.fi

Logarhitmic excess temperature:

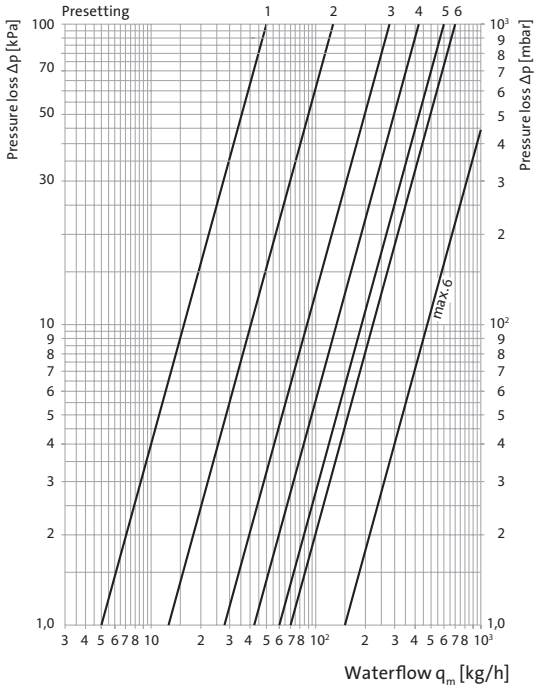
e.g. $t_{in}/t_{out}/t_{room}$

75/65/20 = 49,83 K

70/40/20 = 32,74 K

Pressure loss and presetting

PURMO M30



P-deviation	2K						max.
Presetting	1	2	3	4	5	6	6
kv	0,05	0,13	0,27	0,42	0,60	0,70	1,50

For 1-pipe system use the highest presetting of the valve insert.

Valve inserts

M30 is suitable for M30 x 1,5 fitted thermostats: MMA, TA.

RD is suitable for thermostat Danfoss RA 2000. Green knobe.

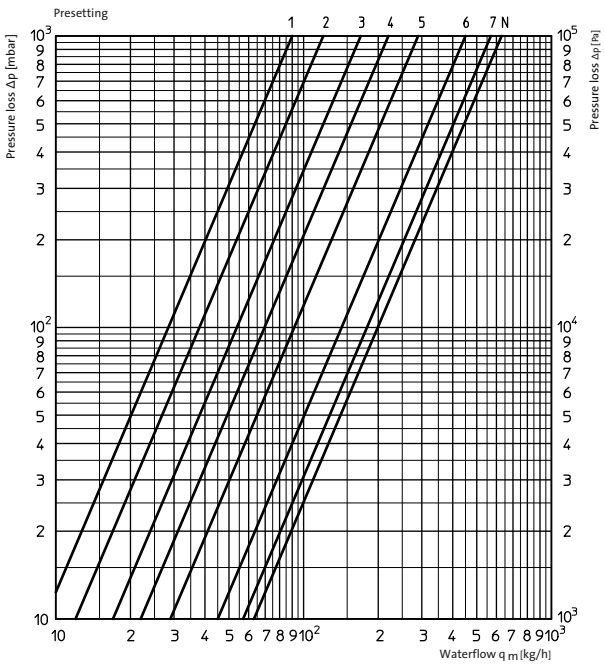
RDF (finer kv-regulation) suitable for thermostat Danfoss RA 2000. Yellow knobe.

Kv-values of the radiator

$$[kv] = \frac{m^3 / h}{\sqrt{bar}}$$

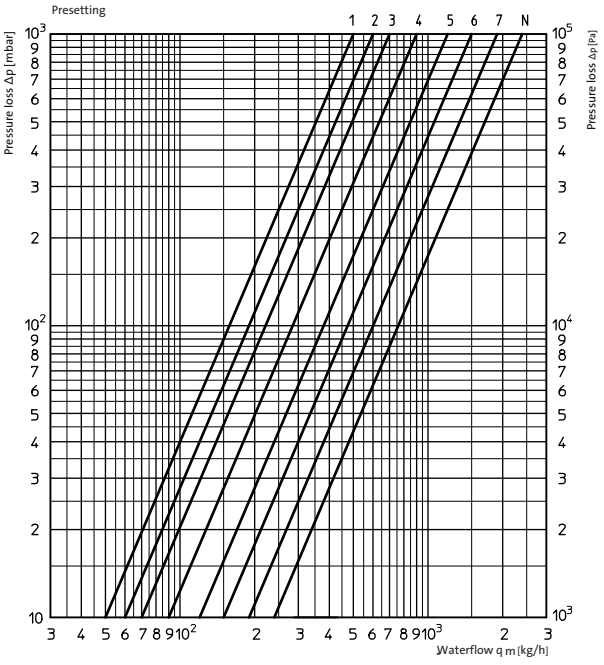
Type	kv
11	2.0
21/22	3.2
33	3.4

PURMO RD



Presetting	1	2	3	4	5	6	7	N
kv-value at 2 K P-deviation	0.09	0.12	0.17	0.22	0.29	0.45	0.57	0.63

PURMO RDF



Presetting	1	2	3	4	5	6	7	N
kv-value at 2 K P-deviation	0.05	0.06	0.07	0.09	0.12	0.15	0.19	0.24

Height 300 mm	Radiator-types	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Voulme litre
PCV 11 ϕ_n = 517 W/m n = 1,2725	PCV 11	500	5452302	151	79	5,9	0,6
	PCV 11	600	5452303	182	94	7,1	0,7
	PCV 11	700	5452304	212	110	8,3	0,8
	PCV 11	800	5452305	242	126	9,4	0,9
	PCV 11	900	5452306	273	142	10,6	1,0
	PCV 11	1 000	5452307	303	157	11,8	1,1
	PCV 11	1 200	5452309	364	189	14,2	1,3
	PCV 11	1 400	5452310	424	220	16,5	1,5
	PCV 11	1 600	5452311	485	252	18,9	1,8
	PCV 11	1 800	5452312	545	283	21,2	2,0
	PCV 11	2 000	5452314	606	315	23,6	2,2
	PCV 11	2 300	5452316	697	362	27,1	2,5
	PCV 11	2 600	5452318	788	409	30,7	2,9
	PCV 11	3 000	5452320	909	472	35,4	3,3
PCV 21 ϕ_n = 714 W/m n = 1,2886	PCV 21	500	5452602	208	107	8,2	1,5
	PCV 21	600	5452603	249	129	9,8	1,7
	PCV 21	700	5452604	291	150	11,5	2,0
	PCV 21	800	5452605	332	171	13,1	2,3
	PCV 21	900	5452606	374	193	14,8	2,6
	PCV 21	1 000	5452607	416	214	16,4	2,9
	PCV 21	1 200	5452609	499	257	19,7	3,5
	PCV 21	1 400	5452610	582	300	23,0	4,1
	PCV 21	1 600	5452611	665	343	26,2	4,6
	PCV 21	1 800	5452612	748	386	29,5	5,2
	PCV 21	2 000	5452614	831	428	32,8	5,8
	PCV 21	2 300	5452616	956	493	37,7	6,7
	PCV 21	2 600	5452618	1 080	557	42,6	7,5
	PCV 21	3 000	5452620	1 247	643	49,2	8,7
PCV 22 ϕ_n = 917 W/m n = 1,2966	PCV 22	500	5452902	266	137	9,6	1,5
	PCV 22	600	5452903	319	164	11,5	1,7
	PCV 22	700	5452904	372	191	13,4	2,0
	PCV 22	800	5452905	426	218	15,3	2,3
	PCV 22	900	5452906	479	246	17,2	2,6
	PCV 22	1 000	5452907	532	273	19,1	2,9
	PCV 22	1 200	5452909	638	328	22,9	3,5
	PCV 22	1 400	5452910	745	382	26,7	4,1
	PCV 22	1 600	5452911	851	437	30,6	4,6
	PCV 22	1 800	5452912	957	491	34,4	5,2
	PCV 22	2 000	5452914	1 064	546	38,2	5,8
	PCV 22	2 300	5452916	1 223	628	43,9	6,7
	PCV 22	2 600	5452918	1 383	710	49,7	7,5
	PCV 22	3 000	5452920	1 596	819	57,3	8,7
PCV 33 ϕ_n = 1 328 W/m n = 1,2984	PCV 33	500	5453202	385	197	14,0	2,3
	PCV 33	600	5453203	462	237	16,7	2,7
	PCV 33	700	5453204	539	276	19,5	3,2
	PCV 33	800	5453205	616	316	22,3	3,6
	PCV 33	900	5453206	693	355	25,1	4,1
	PCV 33	1 000	5453207	770	395	27,9	4,5
	PCV 33	1 200	5453209	924	474	33,5	5,4
	PCV 33	1 400	5453210	1 078	553	39,1	6,3
	PCV 33	1 600	5453211	1 232	632	44,6	7,2
	PCV 33	1 800	5453212	1 385	711	50,2	8,1
	PCV 33	2 000	5453214	1 539	789	55,8	9,0
	PCV 33	2 300	5453216	1 770	908	64,2	10,4
	PCV 33	2 600	5453218	2 001	1 026	72,5	11,7
	PCV 33	3 000	5453220	2 309	1 184	83,7	13,5

Height 400 mm	Radiator-types	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Voulme litre
PCV 11 ϕ_n = 672 W/m n = 1,2784	PCV 11	500	5452342	196	102	7,9	0,8
	PCV 11	600	5452343	236	122	9,4	0,9
	PCV 11	700	5452344	275	142	11,0	1,1
	PCV 11	800	5452345	314	163	12,6	1,2
	PCV 11	900	5452346	354	183	14,1	1,4
	PCV 11	1 000	5452347	393	204	15,7	1,5
	PCV 11	1 200	5452349	471	244	18,8	1,8
	PCV 11	1 400	5452350	550	285	22,0	2,1
	PCV 11	1 600	5452351	628	326	25,1	2,4
	PCV 11	1 800	5452352	707	366	28,3	2,7
	PCV 11	2 000	5452354	786	407	31,4	3,0
	PCV 11	2 300	5452356	903	468	36,1	3,5
	PCV 11	2 600	5452358	1 021	529	40,8	3,9
	PCV 11	3 000	5452360	1 178	611	47,1	4,5
PCV 21 ϕ_n = 907 W/m n = 1,2964	PCV 21	500	5452642	263	135	10,9	1,8
	PCV 21	600	5452643	316	162	13,1	2,2
	PCV 21	700	5452644	368	189	15,3	2,5
	PCV 21	800	5452645	421	216	17,4	2,9
	PCV 21	900	5452646	474	243	19,6	3,2
	PCV 21	1 000	5452647	526	270	21,8	3,6
	PCV 21	1 200	5452649	631	324	26,2	4,3
	PCV 21	1 400	5452650	737	378	30,5	5,0
	PCV 21	1 600	5452651	842	432	34,9	5,8
	PCV 21	1 800	5452652	947	486	39,2	6,5
	PCV 21	2 000	5452654	1 052	540	43,6	7,2
	PCV 21	2 300	5452656	1 210	621	50,1	8,3
	PCV 21	2 600	5452658	1 368	702	56,7	9,4
	PCV 21	3 000	5452660	1 578	810	65,4	10,8
PCV 22 ϕ_n = 1 161 W/m n = 1,3030	PCV 22	500	5452942	336	172	12,8	1,8
	PCV 22	600	5452943	403	206	15,3	2,1
	PCV 22	700	5452944	470	241	17,9	2,5
	PCV 22	800	5452945	537	275	20,4	2,8
	PCV 22	900	5452946	604	309	23,0	3,2
	PCV 22	1 000	5452947	672	344	25,5	3,5
	PCV 22	1 200	5452949	806	412	30,6	4,2
	PCV 22	1 400	5452950	940	481	35,7	4,9
	PCV 22	1 600	5452951	1 075	550	40,8	5,6
	PCV 22	1 800	5452952	1 209	619	45,9	6,3
	PCV 22	2 000	5452954	1 343	687	51,0	7,0
	PCV 22	2 300	5452956	1 545	790	58,7	8,1
	PCV 22	2 600	5452958	1 746	893	66,3	9,1
	PCV 22	3 000	5452960	2 015	1 031	76,5	10,5
PCV 33 ϕ_n = 1 681 W/m n = 1,3084	PCV 33	500	5453242	485	248	18,7	2,8
	PCV 33	600	5453243	582	297	22,4	3,4
	PCV 33	700	5453244	679	347	26,1	3,9
	PCV 33	800	5453245	776	396	29,8	4,5
	PCV 33	900	5453246	873	446	33,6	5,0
	PCV 33	1 000	5453247	970	495	37,3	5,6
	PCV 33	1 200	5453249	1 164	594	44,8	6,7
	PCV 33	1 400	5453250	1 358	693	52,2	7,8
	PCV 33	1 600	5453251	1 552	792	59,7	9,0
	PCV 33	1 800	5453252	1 746	891	67,1	10,1
	PCV 33	2 000	5453254	1 940	990	74,6	11,2
	PCV 33	2 300	5453256	2 232	1 139	85,8	12,9
	PCV 33	2 600	5453258	2 523	1 287	97,0	14,6
	PCV 33	3 000	5453260	2 911	1 485	111,9	16,8

Height 500 mm	Radiator-types	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Voulme litre
PCV 11 ϕ_n = 822 W/m n = 1,2842	PCV 11	500	5452382	240	124	9,8	0,9
	PCV 11	600	5452383	288	149	11,8	1,1
	PCV 11	700	5452384	336	173	13,7	1,3
	PCV 11	800	5452385	383	198	15,7	1,4
	PCV 11	900	5452386	431	223	17,6	1,6
	PCV 11	1 000	5452387	479	248	19,6	1,8
	PCV 11	1 200	5452389	575	297	23,5	2,2
	PCV 11	1 400	5452390	671	347	27,4	2,5
	PCV 11	1 600	5452391	767	396	31,4	2,9
	PCV 11	1 800	5452392	863	446	35,3	3,2
	PCV 11	2 000	5452394	959	495	39,2	3,6
	PCV 11	2 300	5452396	1 102	569	45,1	4,1
	PCV 11	2 600	5452398	1 246	644	51,0	4,7
	PCV 11	3 000	5452400	1 438	743	58,8	5,4
PCV 21 ϕ_n = 1 090 W/m n = 1,3028	PCV 21	500	5452682	315	161	13,6	2,2
	PCV 21	600	5452683	378	194	16,3	2,6
	PCV 21	700	5452684	441	226	19,0	3,0
	PCV 21	800	5452685	504	258	21,7	3,4
	PCV 21	900	5452686	568	290	24,4	3,9
	PCV 21	1 000	5452687	631	323	27,1	4,3
	PCV 21	1 200	5452689	757	387	32,5	5,2
	PCV 21	1 400	5452690	883	452	37,9	6,0
	PCV 21	1 600	5452691	1 009	516	43,4	6,9
	PCV 21	1 800	5452692	1 135	581	48,8	7,7
	PCV 21	2 000	5452694	1 261	645	54,2	8,6
	PCV 21	2 300	5452696	1 450	742	62,3	9,9
	PCV 21	2 600	5452698	1 640	839	70,5	11,2
	PCV 21	3 000	5452700	1 892	968	81,3	12,9
PCV 22 ϕ_n = 1 397 W/m n = 1,3088	PCV 22	500	5452982	403	206	16,0	2,2
	PCV 22	600	5452983	484	247	19,1	2,6
	PCV 22	700	5452984	564	288	22,3	3,0
	PCV 22	800	5452985	645	329	25,5	3,4
	PCV 22	900	5452986	726	370	28,7	3,9
	PCV 22	1 000	5452987	806	411	31,9	4,3
	PCV 22	1 200	5452989	967	493	38,3	5,2
	PCV 22	1 400	5452990	1 129	576	44,7	6,0
	PCV 22	1 600	5452991	1 290	658	51,0	6,9
	PCV 22	1 800	5452992	1 451	740	57,4	7,7
	PCV 22	2 000	5452994	1 612	822	63,8	8,6
	PCV 22	2 300	5452996	1 854	946	73,4	9,9
	PCV 22	2 600	5452998	2 096	1 069	82,9	11,2
	PCV 22	3 000	5453000	2 419	1 234	95,7	12,9
PCV 33 ϕ_n = 2 014 W/m n = 1,3177	PCV 33	500	5453282	579	294	23,3	3,4
	PCV 33	600	5453283	695	353	28,0	4,1
	PCV 33	700	5453284	811	412	32,6	4,8
	PCV 33	800	5453285	926	470	37,3	5,4
	PCV 33	900	5453286	1 042	529	41,9	6,1
	PCV 33	1 000	5453287	1 158	588	46,6	6,8
	PCV 33	1 200	5453289	1 389	706	55,9	8,2
	PCV 33	1 400	5453290	1 621	823	65,2	9,5
	PCV 33	1 600	5453291	1 853	941	74,6	10,9
	PCV 33	1 800	5453292	2 084	1 058	83,9	12,2
	PCV 33	2 000	5453294	2 316	1 176	93,2	13,6
	PCV 33	2 300	5453296	2 663	1 352	107,2	15,6
	PCV 33	2 600	5453298	3 011	1 529	121,2	17,7
	PCV 33	3 000	5453300	3 474	1 764	139,8	20,4

Height 600 mm	Radiator-types	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Voulme litre
PCV 11 ϕ_n = 965 W/m n = 1,2902	PCV 11	500	5452422	281	145	11,8	1,1
	PCV 11	600	5452423	337	173	14,2	1,3
	PCV 11	700	5452424	393	202	16,5	1,5
	PCV 11	800	5452425	449	231	18,9	1,7
	PCV 11	900	5452426	505	260	21,2	1,9
	PCV 11	1 000	5452427	561	289	23,6	2,1
	PCV 11	1 200	5452429	674	347	28,3	2,5
	PCV 11	1 400	5452430	786	405	33,0	2,9
	PCV 11	1 600	5452431	898	462	37,8	3,4
	PCV 11	1 800	5452432	1 010	520	42,5	3,8
	PCV 11	2 000	5452434	1 123	578	47,2	4,2
	PCV 11	2 300	5452436	1 291	665	54,3	4,8
	PCV 11	2 600	5452438	1 459	752	61,4	5,5
	PCV 11	3 000	5452440	1 684	867	70,8	6,3
PCV 21 ϕ_n = 1 266 W/m n = 1,3077	PCV 21	500	5452722	365	187	16,2	2,5
	PCV 21	600	5452723	439	224	19,4	3,0
	PCV 21	700	5452724	512	261	22,7	3,5
	PCV 21	800	5452725	585	298	25,9	4,0
	PCV 21	900	5452726	658	336	29,2	4,5
	PCV 21	1 000	5452727	731	373	32,4	5,0
	PCV 21	1 200	5452729	877	448	38,9	6,0
	PCV 21	1 400	5452730	1 023	522	45,4	7,0
	PCV 21	1 600	5452731	1 169	597	51,8	8,0
	PCV 21	1 800	5452732	1 316	672	58,3	9,0
	PCV 21	2 000	5452734	1 462	746	64,8	10,0
	PCV 21	2 300	5452736	1 681	858	74,5	11,5
	PCV 21	2 600	5452738	1 900	970	84,2	13,0
	PCV 21	3 000	5452740	2 193	1 119	97,2	15,0
PCV 22 ϕ_n = 1 630 W/m n = 1,3139	PCV 22	500	5453022	469	239	19,2	2,6
	PCV 22	600	5453023	563	287	23,0	3,1
	PCV 22	700	5453024	657	334	26,9	3,6
	PCV 22	800	5453025	751	382	30,7	4,1
	PCV 22	900	5453026	845	430	34,6	4,6
	PCV 22	1 000	5453027	939	478	38,4	5,1
	PCV 22	1 200	5453029	1 126	573	46,1	6,1
	PCV 22	1 400	5453030	1 314	669	53,8	7,1
	PCV 22	1 600	5453031	1 502	764	61,4	8,2
	PCV 22	1 800	5453032	1 690	860	69,1	9,2
	PCV 22	2 000	5453034	1 877	955	76,8	10,2
	PCV 22	2 300	5453036	2 159	1 098	88,3	11,7
	PCV 22	2 600	5453038	2 440	1 242	99,8	13,3
	PCV 22	3 000	5453040	2 816	1 433	115,2	15,3
PCV 33 ϕ_n = 2 331 W/m n = 1,3260	PCV 33	500	5453322	668	338	28,0	4,0
	PCV 33	600	5453323	801	405	33,5	4,7
	PCV 33	700	5453324	935	473	39,1	5,5
	PCV 33	800	5453325	1 068	540	44,7	6,3
	PCV 33	900	5453326	1 202	608	50,3	7,1
	PCV 33	1 000	5453327	1 335	675	55,9	7,9
	PCV 33	1 200	5453329	1 603	810	67,1	9,5
	PCV 33	1 400	5453330	1 870	945	78,3	11,1
	PCV 33	1 600	5453331	2 137	1 080	89,4	12,6
	PCV 33	1 800	5453332	2 404	1 215	100,6	14,2
	PCV 33	2 000	5453334	2 671	1 351	111,8	15,8
	PCV 33	2 300	5453336	3 072	1 553	128,6	18,2
	PCV 33	2 600	5453338	3 472	1 756	145,3	20,5
	PCV 33	3 000	5453340	4 006	2 026	167,7	23,7

Height 900 mm	Radiator-types	Length mm	HEPAC code	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Voulme litre
PCV 11 ϕ_n = 1 365 W/m n = 1,3087	PCV 11	500	5452542	394	201	17,9	1,4
	PCV 11	600	5452543	473	241	21,4	1,6
	PCV 11	700	5452544	551	281	25,0	1,9
	PCV 11	800	5452545	630	321	28,6	2,2
	PCV 11	900	5452546	709	362	32,1	2,4
	PCV 11	1 000	5452547	788	402	35,7	2,7
	PCV 11	1 200	5452549	945	482	42,8	3,2
	PCV 11	1 400	5452550	1 103	563	50,0	3,8
	PCV 11	1 600	5452551	1 260	643	57,1	4,3
	PCV 11	1 800	5452552	1 418	723	64,3	4,9
	PCV 11	2 000	5452554	1 576	804	71,4	5,4
	PCV 11	2 300	5452556	1 812	924	82,1	6,2
	PCV 11	2 600	5452558	2 048	1 045	92,8	7,0
	PCV 11	3 000	5452560	2 363	1 206	107,1	8,1
PCV 21 ϕ_n = 1 754 W/m n = 1,3139	PCV 21	500	5452842	505	257	24,1	3,5
	PCV 21	600	5452843	606	308	28,9	4,2
	PCV 21	700	5452844	707	360	33,7	4,9
	PCV 21	800	5452845	808	411	38,6	5,6
	PCV 21	900	5452846	909	462	43,4	6,3
	PCV 21	1 000	5452847	1 010	514	48,2	7,0
	PCV 21	1 200	5452849	1 212	617	57,8	8,4
	PCV 21	1 400	5452850	1 414	719	67,5	9,8
	PCV 21	1 600	5452851	1 616	822	77,1	11,2
	PCV 21	1 800	5452852	1 818	925	86,8	12,6
	PCV 21	2 000	5452854	2 020	1 028	96,4	14,0
	PCV 21	2 300	5452856	2 323	1 182	110,9	16,1
	PCV 21	2 600	5452858	2 626	1 336	125,3	18,2
	PCV 21	3 000	5452860	3 030	1 542	144,6	21,0
PCV 22 ϕ_n = 2 319 W/m n = 1,3257	PCV 22	500	5453142	664	336	29,0	3,6
	PCV 22	600	5453143	797	403	34,8	4,3
	PCV 22	700	5453144	930	470	40,6	5,0
	PCV 22	800	5453145	1 063	538	46,4	5,7
	PCV 22	900	5453146	1 196	605	52,2	6,4
	PCV 22	1 000	5453147	1 329	672	58,0	7,1
	PCV 22	1 200	5453149	1 595	806	69,6	8,5
	PCV 22	1 400	5453150	1 860	941	81,2	9,9
	PCV 22	1 600	5453151	2 126	1 075	92,8	11,4
	PCV 22	1 800	5453152	2 392	1 210	104,4	12,8
	PCV 22	2 000	5453154	2 658	1 344	116,0	14,2
	PCV 22	2 300	5453156	3 056	1 546	133,4	16,3
	PCV 22	2 600	5453158	3 455	1 747	150,8	18,5
	PCV 22	3 000	5453160	3 986	2 016	174,0	21,3
PCV 33 ϕ_n = 3 202 W/m n = 1,3460	PCV 33	500	5453442	910	455	41,8	5,8
	PCV 33	600	5453443	1 092	546	50,2	7,0
	PCV 33	700	5453444	1 273	637	58,5	8,1
	PCV 33	800	5453445	1 455	728	66,9	9,3
	PCV 33	900	5453446	1 637	819	75,2	10,4
	PCV 33	1 000	5453447	1 819	910	83,6	11,6
	PCV 33	1 200	5453449	2 183	1 092	100,3	13,9
	PCV 33	1 400	5453450	2 547	1 275	117,0	16,2
	PCV 33	1 600	5453451	2 911	1 457	133,8	18,6
	PCV 33	1 800	5453452	3 275	1 639	150,5	20,9
	PCV 33	2 000	5453454	3 638	1 821	167,2	23,2
	PCV 33	2 300	5453456	4 184	2 094	192,3	26,7
	PCV 33	2 600	5453458	4 730	2 367	217,4	30,2
	PCV 33	3 000	5453460	5 458	2 731	250,8	34,8

Mid connected panel radiators

PURMO PLAN VENTIL COMPACT M (FCVM)

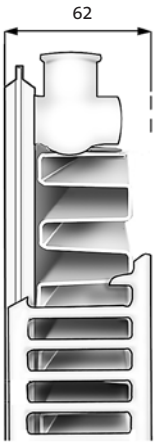
Technical data

The mid connected radiators have a flat front. All PURMO radiators are intended for closed heating systems.

Construction	EN 442-1
Material	Cold rolled steelplate EN 10130
Surface treatment	Surface treatment in five steps: • Alkalic degreased • Phosphated • Dipped in primer (electrical); KAT • Coated with polyester-epoxy resin powder • Stoved (about 200°C) The surface treatment process follows the standard DIN 55900.
Standard colour	White, RAL 9016. Other colours p. 79
Working pressure	10 bar
Connections	4 side connections 1/2" ISO 228 and 2 bottom mid connections 1/2" ISO 228, distance 50 mm
Certification	EN ISO 9001 and ISO 14001
Height	300, 400, 500 and 600 mm
Pituudet	400–3 000 mm
Length	FCVM 11, FCVM 21, FCVM 22, FCVM 33
Accessories	The radiator package includes Quick brackets (Type 11) or Monclac-wall brackets (Types 21,22 and 33), screws and plastic plugs, 1/2"valve insert (M30), an air vent and 3 blind plugs.
Output	Outputs can be found on our webpage www.purmo.fi

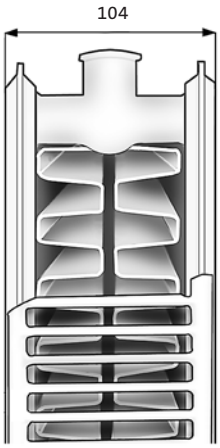
Radiator types

FCVM 11

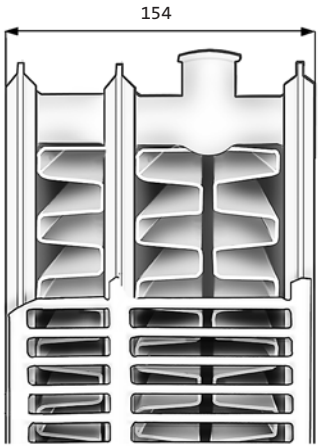


FCVM 21

FCVM 22



FCVM 33



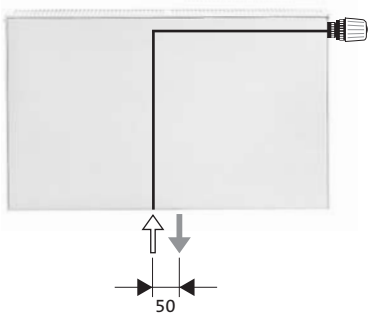
Connection

The integrated valve system is welded onto the radiator during the manufacture process and is thereafter a fixed part of the radiator. A valve insert, PURMO M30, PURMO RD or PURMO RDF (see p. 24) is to be placed in the upper part of the valve assembly. There are R 1/2" inner threads in the valve for the pipe connection.

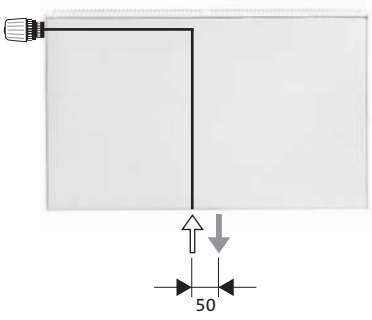
Bottom connection

Thanks to the built in valve system, connection at the bottom is possible. Bottom right hand connection is standard, but left hand connection is possible, if specified at time of order.

Standard model – right handed

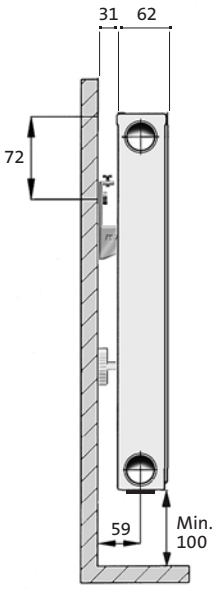


Special model – left handed

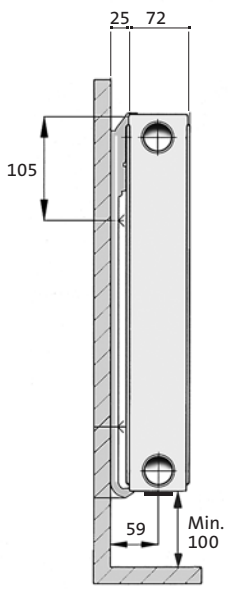


Installation measures

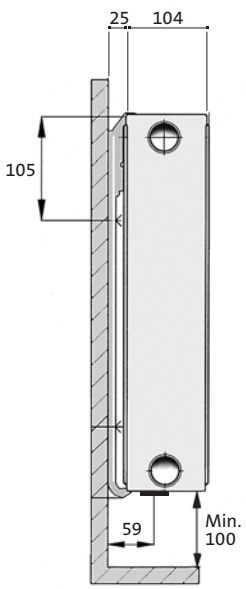
FCVM 11



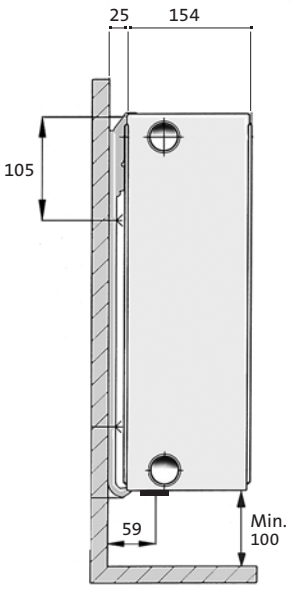
FCVM 21



FCVM 22



FCVM 33



Note! The connection measure to the wall is always 59 mm.
Type 11 is mounted with Quick brakets, types 21, 22, 33 with Monclac wall brackets.

Pressure loss and presetting

Valve insert PURMO M30 is installed at the factory.
Pressure loss and presetting, p. 24. Outputs can be found on our website www.purmo.fi.

PURMO Vertical

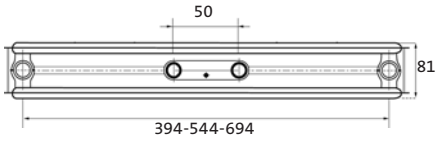
Tecnical data

Construction	EN 442-1
Material	Cold rolled steelplate EN 10130
Surface treatment	Surface treatment in five steps: • Alkalic degreased • Phosphated • Dipped in primer (electrical); KAT • Coated with polyester-epoxy resin powder • Stoved (about 200°C) The surface treatment process follows the standard DIN 55900.
Standard colour	White, RAL 9016. Other colours p. 79
Working pressure	6 bar
Connections	2 bottom mid connections 1/2" ISO 228, distance 50 mm, and 4 x 1/2" ISO 228.
Certification	EN ISO 9001 and ISO 14001
Height	1800, 1950 and 2100 mm
Length	450, 600 and 750 mm
Types	VR 20, VR 21 and VR 22
Accessories	The radiator package includes brackets 2 side plates, clips, installation model, air vent and 3 blind plugs, screws and plugs.
Output	Outputs can be found on our website www.purmo.fi. All outputs are logarhitmically calculated according to the EN442-standard.
Other accessories	A towel rail of brushed steel is available on request.

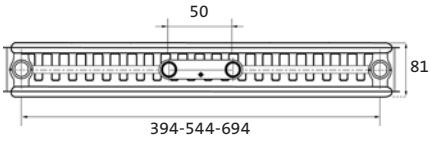
Purmo Vertical has a profiled front plate.

Radiator types

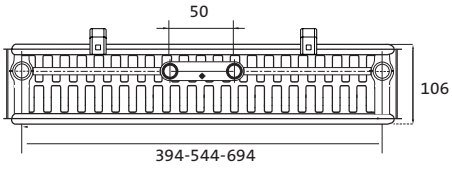
VR 20



VR 21

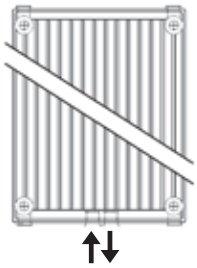


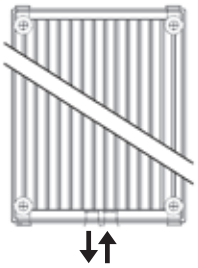
VR 22



Connection

Midconnection

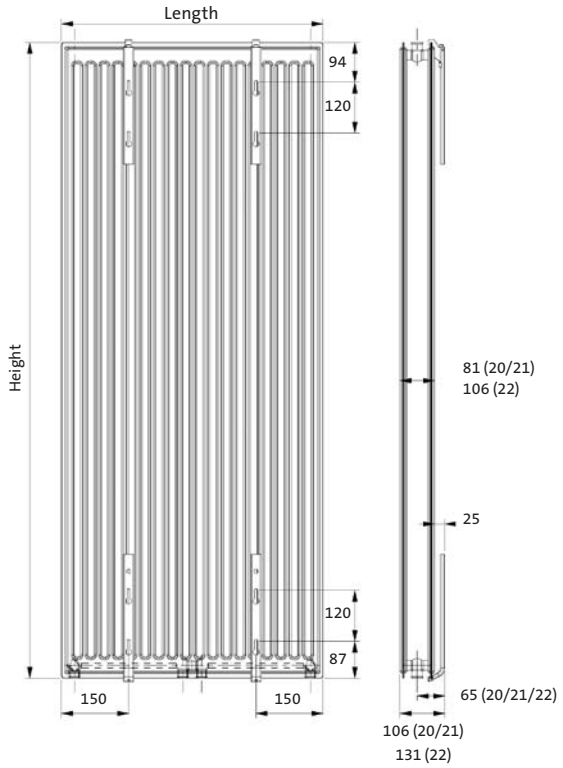




Bottom connection

Other connections are not possible.

Installation measures

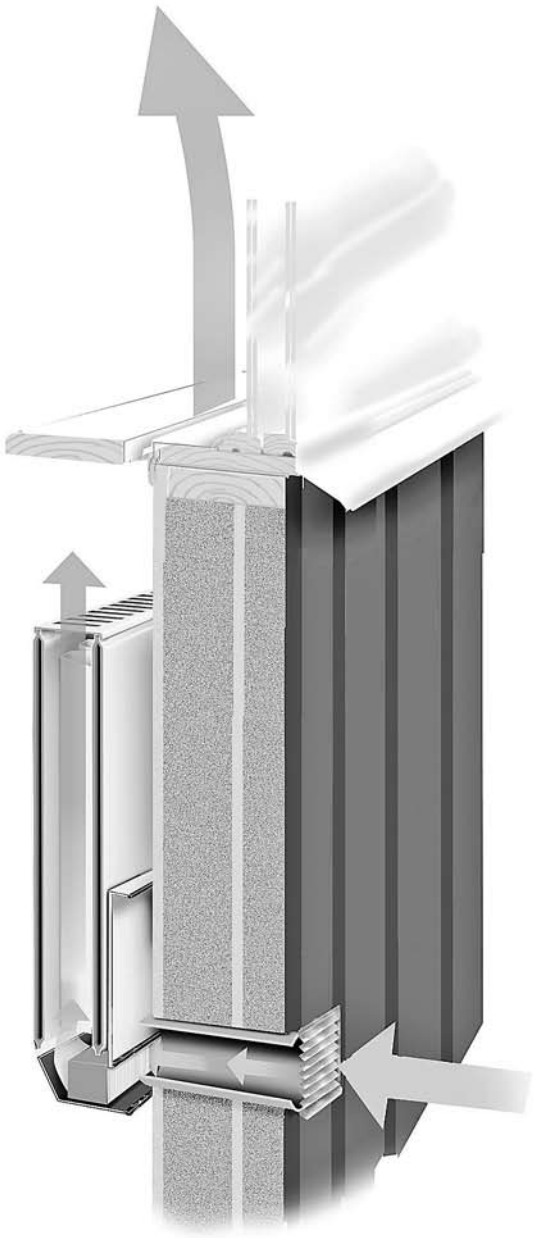


PURMO Air

For better living comfort

How does PURMO Air work?
An air duct of about ø 100 mm is built into the exterior wall, behind the radiator, through which outdoor air enters the PURMO Air supply device and the radiator. The air is both filtered and heated simultaneously. A central extract ceiling-mounted fan creates the suction needed to draw the required levels of outside air into the occupied space and the air flows into the room almost silently and without creating draughts.

Benefits
- Efficient and economical heating
- Pleasant distribution of heat and air
- Low noise levels and no draughts
- Good indoor air quality thanks to efficient filtration
- Easy cleaning and change of filter
- Long lifecycle
- Simple installation
- Structure independent of radiator height
- The air unit does not change the installation measures of the radiator



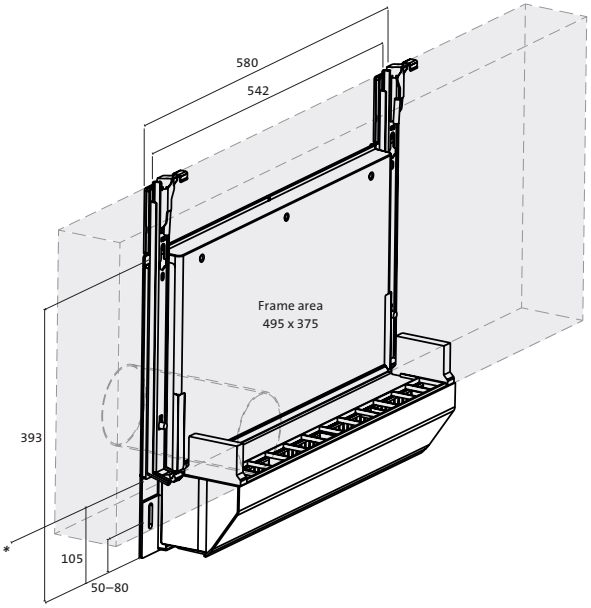
PURMO Air is suitable for PURMO Compact, Ventil Compact and Planora.
PURMO Air is a patented construction.

Note! *New AIR autumn 2007!*

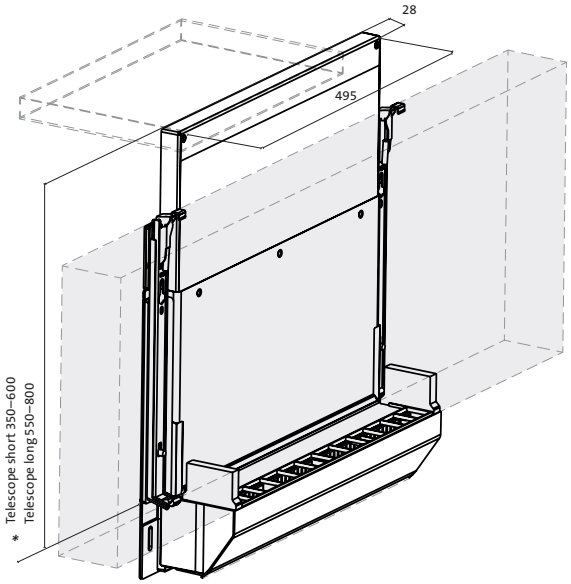
PURMO Air ventilation supply units

PURMO Air is suitable for either a 100 mm dia round wallduct or another shape of approx. ø 100 mm, so called Telescope model.

Type	**HEPAC code**
AIR 11	5405675
AIR 21	5405676
AIR 22	5405677
AIR Telescope Short	5405752
AIR Telescope Long	5405753



AIR Standard
Wall duct ø 100 mm behind the radiator.
** Lower edge of the radiator*



AIR Telescope
Air intake through wall channel above the radiator.
** Lower edge of the radiator. Other measures as in the Standard model.*

PURMO Air filters

Fine filter F9

Purmo Air has a F9 class fine filter as standard. It is especially recommended for those who suffer from allergies or asthma.
HEPAC code 5405606

Basic filter

This filter prevents insects and to some extent dust from entering the room. The filter carpet is washable.
HEPAC code 5405605

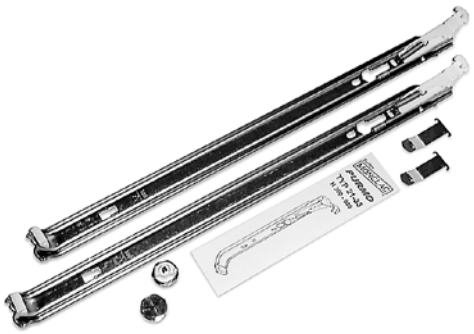
Accessories

PURMO Compact, Hygiene, Planora and midconnected radiators

PURMO Monclac-wallbrackets

(2 brackets, air vent, blind plug and locking parts)

Type	Height	HEPAC code
10	300	5410802
	400	5410804
	500	5410808
	600	5410810
11	300	5410812
	400	5410814
	450	5410816
	500	5410818
	600	5410820
	900	5410821
21– 33 /	200	5410832
	300	5410822
20–30	400	5410824
	450	5410826
	500	5410828
	600	5410830
	900	5410831



PURMO Monclac -wallbracket (height 300–900)

PURMO Monclac-floorbrackets

For types	HEPAC code
11, 22, 33 (height 300–900)	5410887
21 (Height 300–900)	5410888
21 (Height 200)	5410889
22, 33, 44 (Height 200)	5410890

Extra part for type 11

For type	HEPAC code
11	5410886

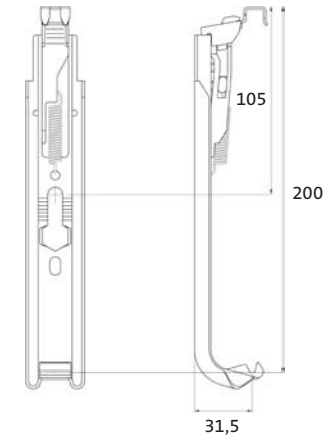
PURMO Monclac upper part for types 20 and 30

For types	HEPAC code
H 20 and 30	5410880

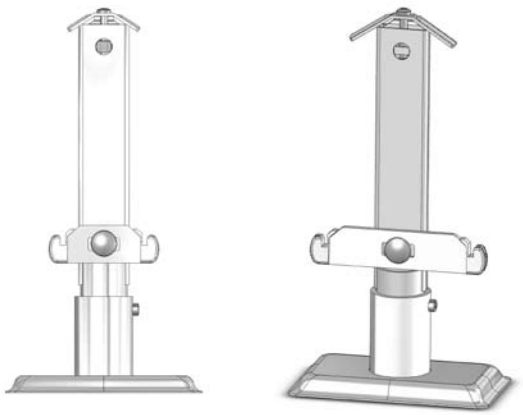
PURMO edge bracket pairs for types 10, 20, 30

For types	HEPAC code
H 10, 20, 30	5405702

PURMO Monclac -floorbracket (height 300–900)



PURMO Monclac -wallbracket (height 200)



PURMO Monclac -floorbracket (height 200)

Other accessories

Air vent and blind plug 1/2"

HEPAC code 5410650

Wet paint 10 ml (RAL 9016)

HEPAC code 3188155

Spray 385 ml (RAL 9016)

HEPAC code 3266221

PURMO M30 valve insert

PURMO RD valve insert

PURMO RDF valve insert

Order template

Type, height and lenght must be stated in the order.

Example **C 11 – 600 – 1200**

Radiator type

Radiator height, mm

Radiator length, mm

Additional information

Brackets (Wallbracket or floorbracket), p. 36
Connections for products Planora and Purmo Kon, p. 22 and 39
Valve inserts for products Planora and Purmo Kon, p. 24 and 43
Colour (Standardcolour white RAL 9016), p. 79

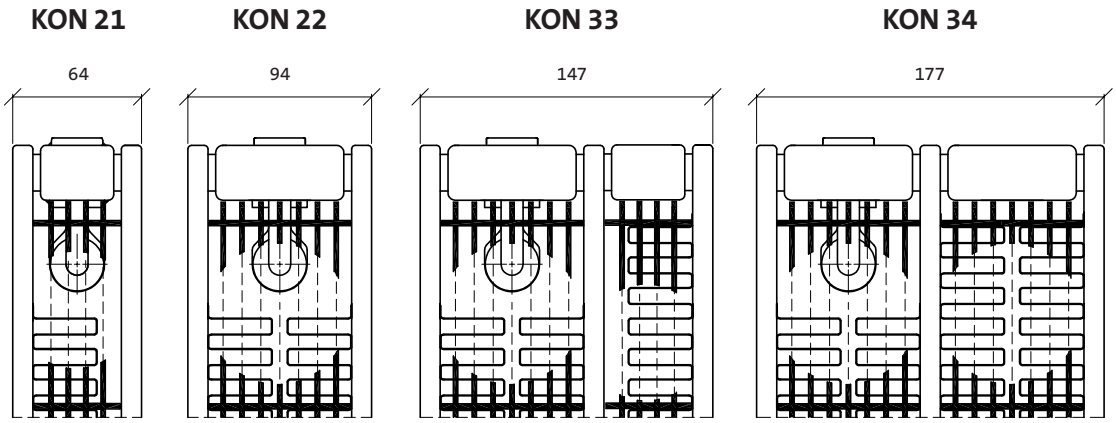
PURMO Kon

Technical data

Construction	EN 442-1
Water surfaces	Rectangular pipe EN 10130
Convection fins	Cold rolled steelplate EN 10130
Surface treatment	Surface treatment in five steps: • Alkalic degreased • Phosphated • Dipped in primer (electrical); KAT • Coated with polyester-epoxy resin powder • Stoved (about 200°C) The surface treatment process follows the standard DIN 55900.
Standard colour	White, RAL 9016. Other colours p. 79
Working pressure	8 bar
Connections	NS 15 -inner thread 1/2" ISO 228
Certification	SFS-EN ISO 9001 and ISO 14001
Height	142, 214 and 286 mm
Length	600–3 000 mm
Types	KON 21 double panel, one convection fin KON 22 double panel, two convection fins KON 33 triple panel, three convection fins KON 34 triple panel, four convection fins
Brackets	Wallbracket or floorbracket

The convectors are typically mounted in places where they are clearly visible, such as below big window surfaces, which is why their shape and finish must be in harmony with the surroundings. Depending on their location, convectors may be subjected to rough handling, and their shape, sharp edges or corners must not cause any harm.

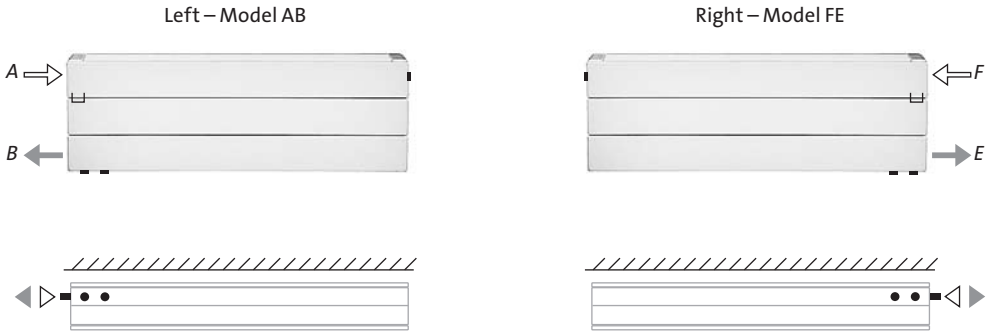
Convector types



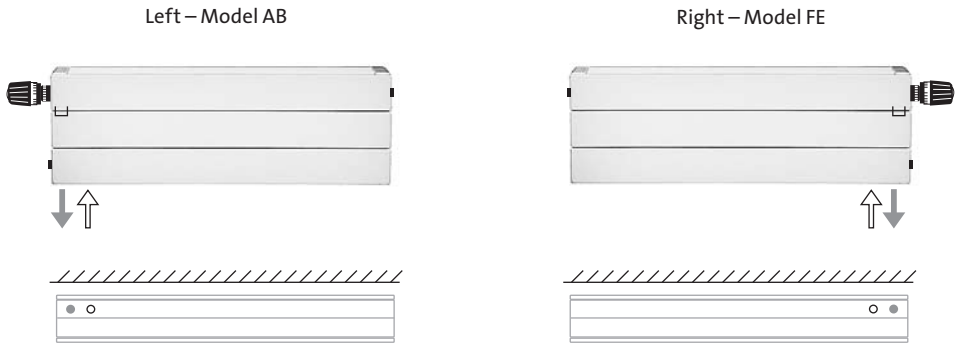
Pipe connections

Standard connection

Same end connection

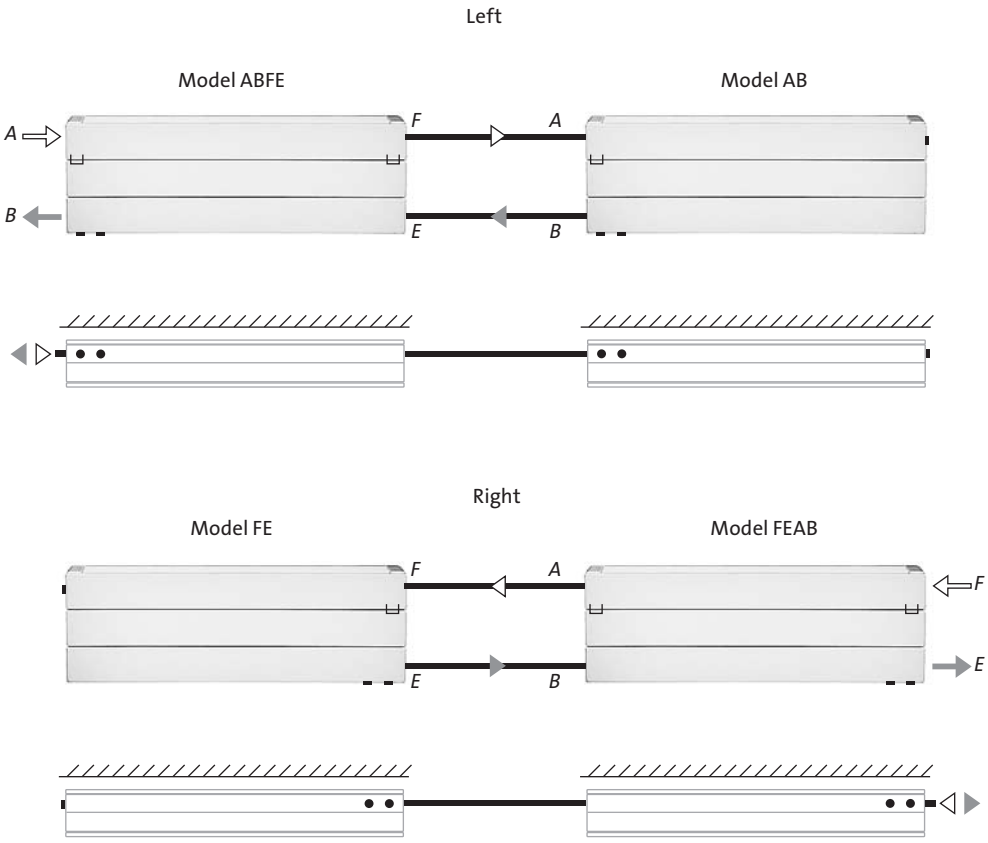


Bottom connection



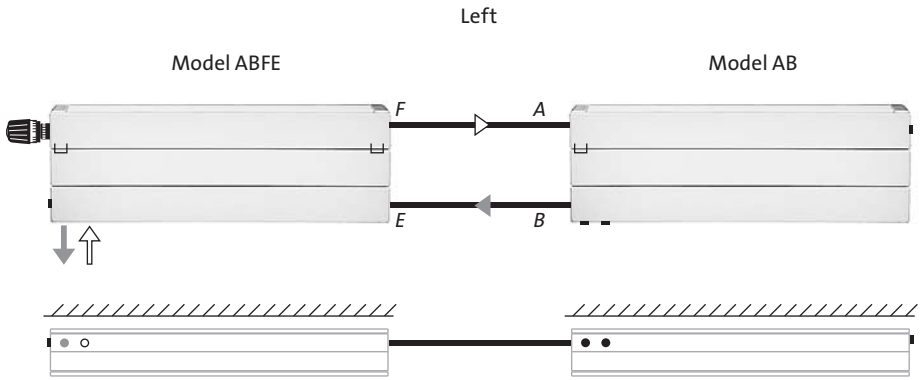
Serial connection

Side connection

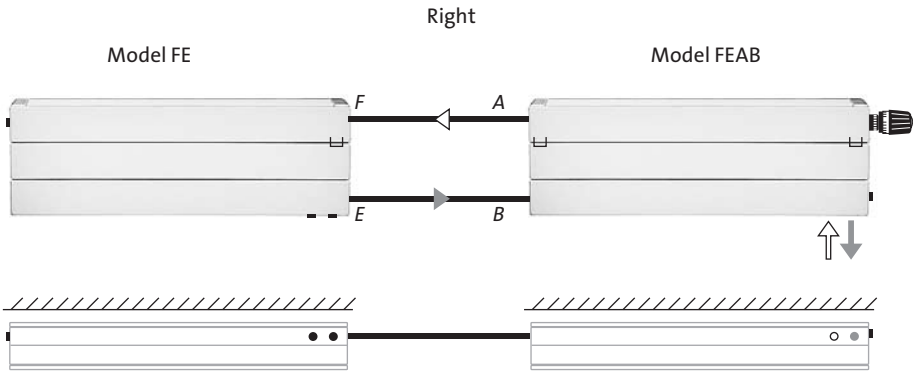


Max 2 convector series is recommended.

Serial connection



Bottom connection



Max 2 convector series is recommended.

Valve connections

External valves

The end-connected and, in some cases, the bottom-connected PURMO Kon can be equipped with external control and shut-off valves.

Integrated valve

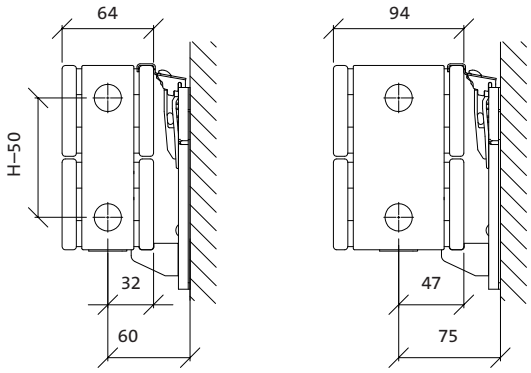
We recommend, however, that you use an integrated valve for the bottom connection. In this case, a valve insert is connected to the upper-corner connection point and a thermostat sensor is then mounted to the insert. We also recommend the use of pilot valves with locks for two-pipe systems. A one-pipe system can be set up using a four-way valve with by-pass (H-valve).

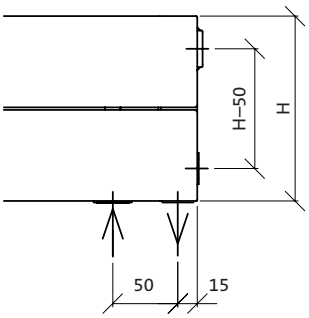
Installation measures

Wallbrackets (p. 47) – only for types 21 and 22

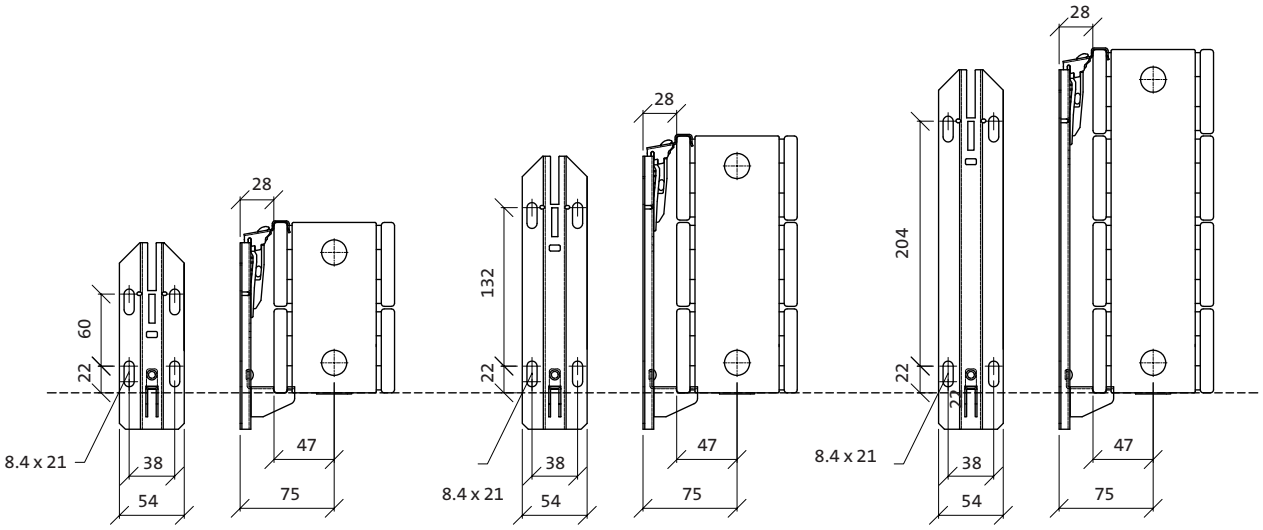
KON 21 **KON 22**

These models can be turned





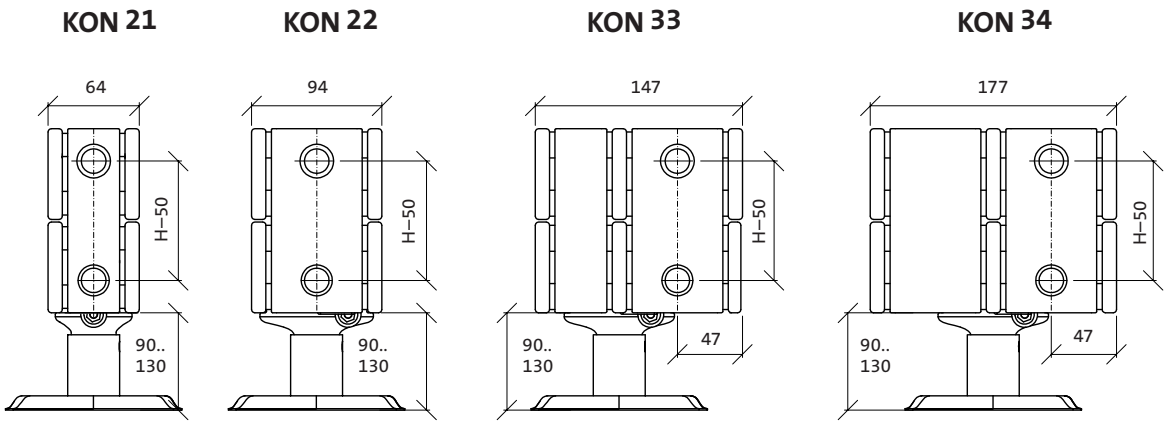
Location of connection points at the end and bottom



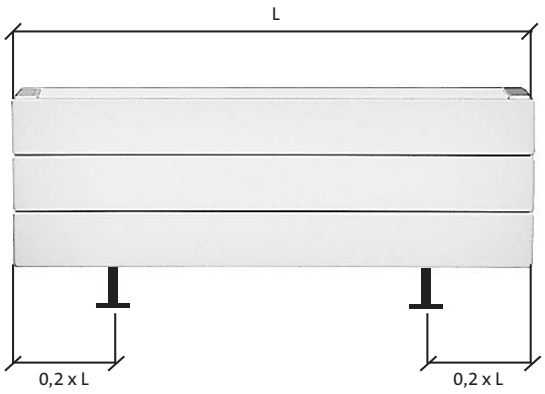
H 142 **H 214** **H 286**

Installation measures

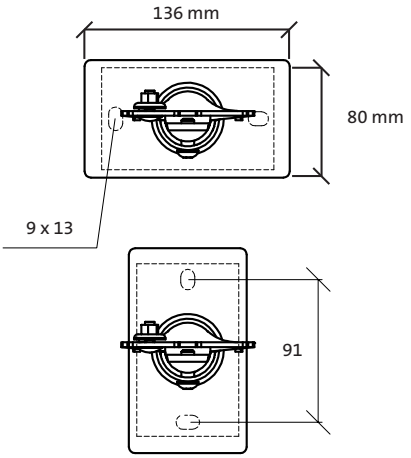
Wallbrackets (p. 47)



Floorbrackets are for all types.
For types 33 and 44 we recommend to always use floorbrackets.



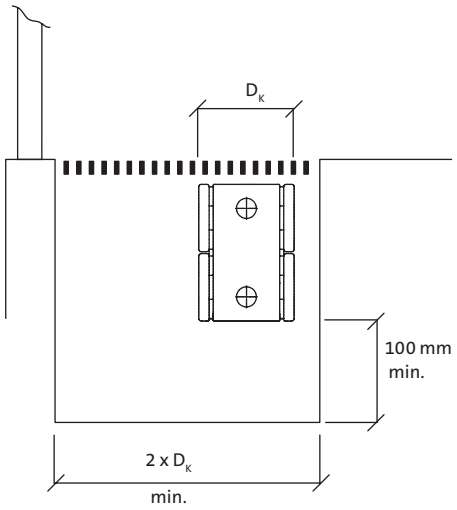
Recommended bracket positioning.



The mount can be turned.

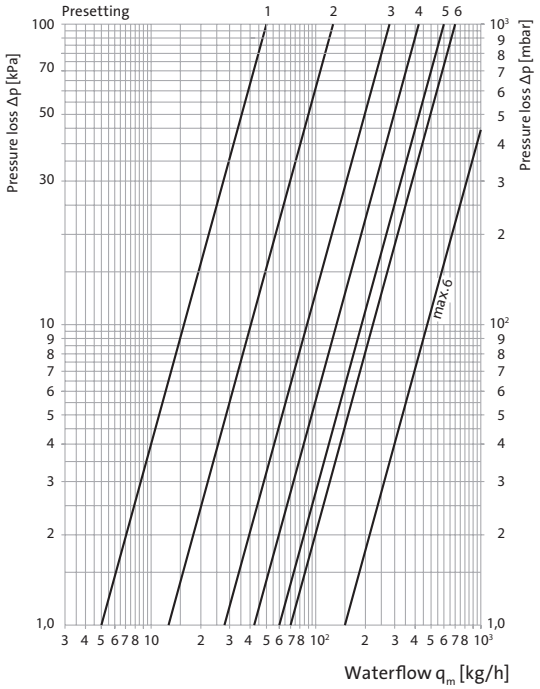
Mounting in floor recess

The recommended mounting method depends on the location and shape of the floor recess and the cover grid; the convector output may decrease by, around 20%.



Pressure loss and presetting

PURMO M30



P-deviation	2K						max.
Presetting	1	2	3	4	5	6	6
kv	0,05	0,13	0,27	0,42	0,60	0,70	1,50

For 1-pipe system use the highest presetting of the valve insert. Type of valve insert must be stated in the order.

Valve inserts

M30 is suitable for M30 x 1,5 fitted thermostats: MMA, TA.

RD is suitable for thermostat Danfoss RA 2000. Green knobe.

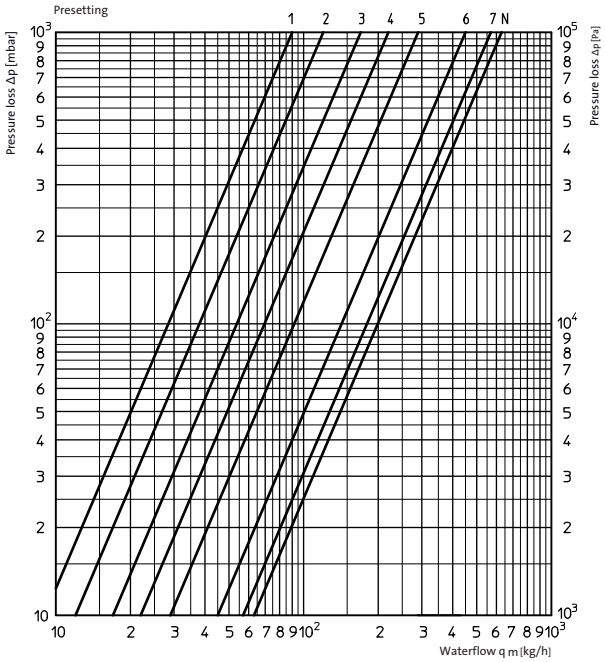
RDF (finer kv-regulation) suitable for thermostat Danfoss RA 2000. Yellow knobe.

Flow resistance of convector bodies by KV-values

$$[kv] = \frac{m^3 / h}{\sqrt{bar}}$$

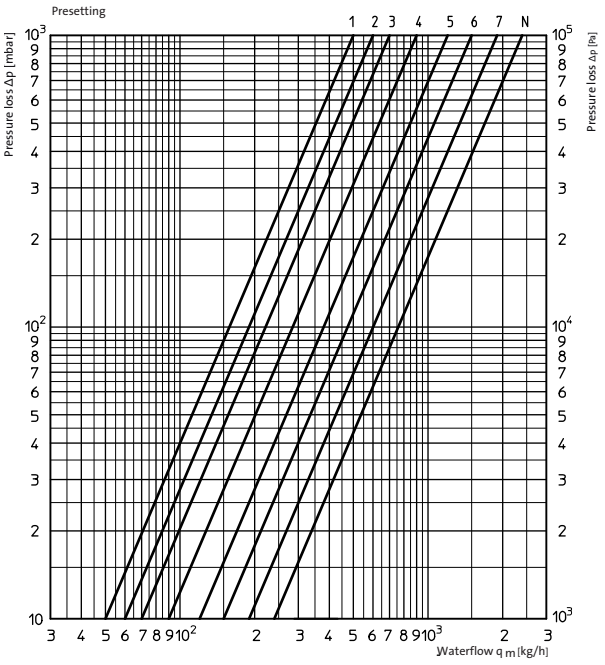
Height	kv
142	2.5
214	3.2
286	4.5

PURMO RD



Presetting	1	2	3	4	5	6	7	N
kv-value at 2 K P-deviation	0.09	0.12	0.17	0.22	0.29	0.45	0.57	0.63

PURMO RDF



Presetting	1	2	3	4	5	6	7	N
kv-value at 2 K P-deviation	0.05	0.06	0.07	0.09	0.12	0.15	0.19	0.24

Height 142 mm	Radiator-type	Length mm	HEPAC code AB	HEPAC code FE	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume litre
KON 21 ϕ_n = 486 W/m n = 1,2602	KON 21	600	5472112	5472112	167	88	7,4	1,1
	KON 21	800	5472114	5472114	225	118	10,0	1,5
	KON 21	1 000	5472116	5472116	282	147	12,5	1,9
	KON 21	1 200	5472118	5472118	339	177	15,0	2,3
	KON 21	1 400	5472120	5472120	396	207	17,6	2,6
	KON 21	1 600	5472122	5472122	454	237	20,1	3,0
	KON 21	1 800	5472124	5472124	511	267	22,7	3,4
	KON 21	2 000	5472126	5472126	568	297	25,2	3,8
	KON 21	2 300	5472128	5472128	654	342	29,0	4,3
	KON 21	2 600	5472130	5472130	740	387	32,8	4,9
	KON 21	3 000	5472132	5472132	854	447	37,9	5,7
KON 22 ϕ_n = 665 W/m n = 1,2536	KON 22	600	5472212	5472212	230	121	9,0	1,3
	KON 22	800	5472214	5472214	308	162	12,0	1,7
	KON 22	1 000	5472216	5472216	387	203	15,1	2,2
	KON 22	1 200	5472218	5472218	465	244	18,1	2,6
	KON 22	1 400	5472220	5472220	544	285	21,2	3,0
	KON 22	1 600	5472222	5472222	623	327	24,3	3,5
	KON 22	1 800	5472224	5472224	701	368	27,3	3,9
	KON 22	2 000	5472226	5472226	780	409	30,4	4,4
	KON 22	2 300	5472228	5472228	897	471	35,0	5,0
	KON 22	2 600	5472230	5472230	1 015	533	39,6	5,7
	KON 22	3 000	5472232	5472232	1 172	615	45,7	6,6
KON 33 ϕ_n = 961 W/m n = 1,2407	KON 33	600	5472312	5472812	334	176	13,7	2,0
	KON 33	800	5472314	5472814	448	237	18,4	2,7
	KON 33	1 000	5472316	5472816	562	297	23,1	3,3
	KON 33	1 200	5472318	5472818	676	357	27,8	4,0
	KON 33	1 400	5472320	5472820	790	418	32,5	4,7
	KON 33	1 600	5472322	5472822	905	478	37,2	5,4
	KON 33	1 800	5472324	5472824	1 019	538	41,9	6,1
	KON 33	2 000	5472326	5472826	1 133	598	46,6	6,7
	KON 33	2 300	5472328	5472828	1 304	689	53,7	7,8
	KON 33	2 600	5472330	5472830	1 475	779	60,7	8,8
	KON 33	3 000	5472332	5472832	1 703	900	70,1	10,1
KON 34 ϕ_n = 1 164 W/m n = 1,2498	KON 34	600	5472412	5472912	403	212	15,2	2,1
	KON 34	800	5472414	5472914	541	284	20,3	2,8
	KON 34	1 000	5472416	5472916	678	357	25,5	3,5
	KON 34	1 200	5472418	5472918	816	429	30,7	4,3
	KON 34	1 400	5472420	5472920	954	501	35,9	5,0
	KON 34	1 600	5472422	5472922	1 091	574	41,1	5,7
	KON 34	1 800	5472424	5472924	1 229	646	46,2	6,4
	KON 34	2 000	5472426	5472926	1 367	719	51,4	7,1
	KON 34	2 300	5472428	5472928	1 573	827	59,2	8,2
	KON 34	2 600	5472430	5472930	1 780	936	67,0	9,3
	KON 34	3 000	5472432	5472932	2 055	1 081	77,3	10,7

Note! Length in mm is a nominal value. The convector´s real length: nominal value minus 15 mm.

Height 214 mm	Radiator-type	Length mm	HEPAC code AB	HEPAC code FE	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume litre
KON 21 ϕ_n = 642 W/m n = 1,2776	KON 21	600	5472142	5472142	220	114	11,1	1,7
	KON 21	800	5472144	5472144	295	153	14,8	2,3
	KON 21	1 000	5472146	5472146	370	192	18,6	2,9
	KON 21	1 200	5472148	5472148	445	231	22,4	3,4
	KON 21	1 400	5472150	5472150	520	269	26,2	4,0
	KON 21	1 600	5472152	5472152	595	308	30,0	4,6
	KON 21	1 800	5472154	5472154	670	347	33,7	5,2
	KON 21	2 000	5472156	5472156	745	386	37,5	5,8
	KON 21	2 300	5472158	5472158	858	445	43,2	6,6
	KON 21	2 600	5472160	5472160	970	503	48,9	7,5
	KON 21	3 000	5472162	5472162	1 120	581	56,4	8,7
KON 22 ϕ_n = 843 W/m n = 1,2693	KON 22	600	5472242	5472242	289	151	13,3	1,9
	KON 22	800	5472244	5472244	388	202	17,8	2,6
	KON 22	1 000	5472246	5472246	487	254	22,4	3,3
	KON 22	1 200	5472248	5472248	586	305	26,9	3,9
	KON 22	1 400	5472250	5472250	685	357	31,4	4,6
	KON 22	1 600	5472252	5472252	784	408	36,0	5,2
	KON 22	1 800	5472254	5472254	883	460	40,5	5,9
	KON 22	2 000	5472256	5472256	982	511	45,1	6,6
	KON 22	2 300	5472258	5472258	1 130	588	51,9	7,5
	KON 22	2 600	5472260	5472260	1 279	666	58,7	8,5
	KON 22	3 000	5472262	5472262	1 476	769	67,8	9,9
KON 33 ϕ_n = 1 233 W/m n = 1,2676	KON 33	600	5472342	5472842	424	221	20,4	3,0
	KON 33	800	5472344	5472844	568	296	27,4	4,0
	KON 33	1 000	5472346	5472846	713	372	34,4	5,0
	KON 33	1 200	5472348	5472848	858	447	41,4	6,0
	KON 33	1 400	5472350	5472850	1 003	522	48,3	7,1
	KON 33	1 600	5472352	5472852	1 147	598	55,3	8,1
	KON 33	1 800	5472354	5472854	1 292	673	62,3	9,1
	KON 33	2 000	5472356	5472856	1 437	749	69,3	10,1
	KON 33	2 300	5472358	5472858	1 654	862	79,7	11,7
	KON 33	2 600	5472360	5472860	1 871	975	90,2	13,2
	KON 33	3 000	5472362	5472862	2 161	1 126	104,2	15,2
KON 34 ϕ_n = 1 494 W/m n = 1,2697	KON 34	600	5472442	5472942	513	267	22,5	3,2
	KON 34	800	5472444	5472944	688	358	30,2	4,3
	KON 34	1 000	5472446	5472946	863	449	37,9	5,4
	KON 34	1 200	5472448	5472948	1 039	541	45,6	6,5
	KON 34	1 400	5472450	5472950	1 214	632	53,3	7,6
	KON 34	1 600	5472452	5472952	1 389	723	61,0	8,7
	KON 34	1 800	5472454	5472954	1 564	814	68,7	9,8
	KON 34	2 000	5472456	5472956	1 740	905	76,4	10,9
	KON 34	2 300	5472458	5472958	2 003	1 042	88,0	12,6
	KON 34	2 600	5472460	5472960	2 266	1 179	99,5	14,2
	KON 34	3 000	5472462	5472962	2 616	1 362	114,9	16,4

Note! Length in mm is a nominal value. The convector´s real length: nominal value minus 15 mm.

Height 286 mm	Radiator-type	Length mm	HEPAC code AB	HEPAC code FE	Output W 70/40/20°C	Output W 45/35/20°C	Weight kg	Volume litre
KON 21 ϕ_n = 797 W/m n = 1,2950	KON 21	600	5472172	5472172	271	139	14,7	2,3
	KON 21	800	5472174	5472174	363	187	19,7	3,1
	KON 21	1 000	5472176	5472176	456	234	24,7	3,8
	KON 21	1 200	5472178	5472178	548	282	29,7	4,6
	KON 21	1 400	5472180	5472180	641	329	34,8	5,4
	KON 21	1 600	5472182	5472182	733	377	39,8	6,2
	KON 21	1 800	5472184	5472184	826	424	44,8	7,0
	KON 21	2 000	5472186	5472186	918	472	49,8	7,7
	KON 21	2 300	5472188	5472188	1 057	543	57,4	8,9
	KON 21	2 600	5472190	5472190	1 196	614	64,9	10,1
	KON 21	3 000	5472192	5472192	1 381	709	74,9	11,6
KON 22 ϕ_n = 1 015 W/m n = 1,2850	KON 22	600	5472272	5472272	346	179	17,7	2,6
	KON 22	800	5472274	5472274	464	240	23,7	3,5
	KON 22	1 000	5472276	5472276	583	301	29,7	4,3
	KON 22	1 200	5472278	5472278	701	362	35,8	5,2
	KON 22	1 400	5472280	5472280	819	423	41,8	6,1
	KON 22	1 600	5472282	5472282	938	484	47,9	7,0
	KON 22	1 800	5472284	5472284	1 056	545	53,9	7,9
	KON 22	2 000	5472286	5472286	1 174	606	59,9	8,7
	KON 22	2 300	5472288	5472288	1 352	698	69,0	10,1
	KON 22	2 600	5472290	5472290	1 529	790	78,1	11,4
	KON 22	3 000	5472292	5472292	1 766	912	90,1	13,1
KON 33 ϕ_n = 1 517 W/m n = 1,2945	KON 33	600	5472372	5472872	515	265	27,1	3,9
	KON 33	800	5472374	5472874	691	355	36,3	5,3
	KON 33	1 000	5472376	5472876	867	446	45,6	6,6
	KON 33	1 200	5472378	5472878	1 044	536	54,9	7,9
	KON 33	1 400	5472380	5472880	1 220	627	64,1	9,3
	KON 33	1 600	5472382	5472882	1 396	717	73,4	10,6
	KON 33	1 800	5472384	5472884	1 572	808	82,6	12,0
	KON 33	2 000	5472386	5472886	1 748	898	91,9	13,3
	KON 33	2 300	5472388	5472888	2 012	1 034	105,8	15,3
	KON 33	2 600	5472390	5472890	2 277	1 170	119,7	17,3
	KON 33	3 000	5472392	5472892	2 629	1 351	138,2	20,0
KON 34 ϕ_n = 1 823 W/m n = 1,2895	KON 34	600	5472472	5472972	620	320	29,8	4,3
	KON 34	800	5472474	5472974	833	429	40,0	5,7
	KON 34	1 000	5472476	5472976	1 045	538	50,2	7,2
	KON 34	1 200	5472478	5472978	1 257	648	60,4	8,7
	KON 34	1 400	5472480	5472980	1 469	757	70,6	10,1
	KON 34	1 600	5472482	5472982	1 681	866	80,8	11,6
	KON 34	1 800	5472484	5472984	1 893	975	91,0	13,0
	KON 34	2 000	5472486	5472986	2 105	1 085	101,2	14,5
	KON 34	2 300	5472488	5472988	2 423	1 249	116,5	16,7
	KON 34	2 600	5472490	5472990	2 742	1 412	131,8	18,9
	KON 34	3 000	5472492	5472992	3 166	1 631	152,2	21,8

Note! Length in mm is a nominal value. The convector´s real length: nominal value minus 15 mm.

PURMO Kon accessories

PURMO Monclac-wallbracket

(brackets 2 pcs, blind plug 2 pcs
and air vent)

Height	HEPAC code
142 mm	5405761
214 mm	5405762
286 mm	5405763

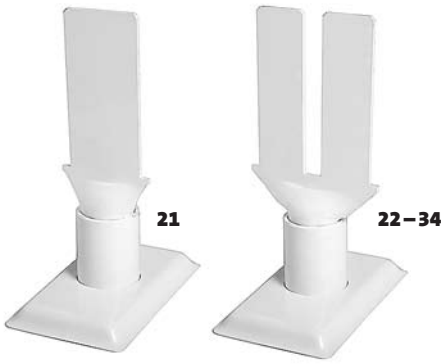
Lenght / brackets
400–1 600 mm = 2 pcs
1 800–3 000 mm = 4 pcs

PURMO Monclac-floorbracket

(brackets 2 pcs, blind plug 3 pcs
and air vent)

Type	HEPAC code
21	5405764
22–34	5405765

PURMO Monclac -wallbrackets



PURMO Monclac -floorbrackets

Heat output calculation model – DIN 4703-3

Heat output (W / m)

$$\phi = \phi_n \times (\Delta T / \Delta T_n)^n$$

in which
ϕ = output, W/m
ϕ_n = norm output, W/m – EN 442
when the logarhitmic excess temperature
$\Delta T_n = 49{,}83$ K
ΔT = logarhitmic excess temperature, K
ΔT_n = norm excess temperature = 49,83 K
n = temperature exponent

The norm outputs ϕ_n and temperature exponents n can be found in the heat output tabels.

$$\Delta T = \frac{t_{in} - t_{out}}{\ln((t_{in} - t_{room}) / (t_{out} - t_{room}))}$$

in which
t_{in} = flow water,°C
t_{out} = return water,°C
t_{room} = room temperature,°C

The heat output values can be calculated with the output simulator on the website www.purmo.fi

Logarhitmic excess temperature:
e.g. $t_{in}/t_{out}/t_{room}$
75/65/20 = 49,83 K
70/40/20 = 32,74 K

Kos & Faro Horizontal

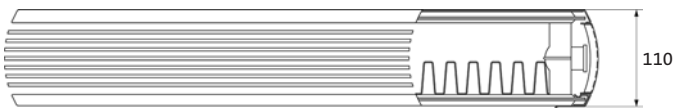
Technical data

Construction	EN 442-1
Material	Cold rolled steelplate EN 10130
Surface treatment	Surface treatment in five steps: • Alkalic degreased • Phosphated • Dipped in primer (electrical); KAT • Coated with polyester-epoxy resin powder • Stoved (about 200°C) The surface treatment process follows the standard DIN 55900.
Standard colour	White, RAL 9016. Other colours p. 79
Working pressure	6 bar
Connections	2 bottom connection 1/2" ISO 228-connections, distance 50 mm and 4 x 1/2" ISO 228-connections
Certification	EN ISO 9001 and ISO 14001
Models	Kos H – flat front panel Faro H – profiled front panel
Height	400, 600, 750 and 900 mm
Length	450, 600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800 and 1950 mm
Types	KOH 21, KOH 22 and FAH 21, FAH 22
Accessories	Monclac –brackets, screws and plugs are included in the radiator package.
Outputs	Outputs are found on our website www.purmo.fi. All outputs are logarhitmically calculated according to the EN442-standard.
Other accessories	Towel rail of mat brushed stainless steel available on request.

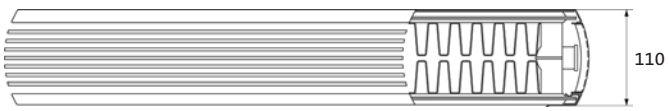
Kos H is a decorative radiator with flat front panel, while Faro H has a profiled front panel. Both radiators have slightly curved side covers and a special top cover finishing that emphasises its unique form.

Radiator types

KOH / FAH 21



KOH / FAH 22



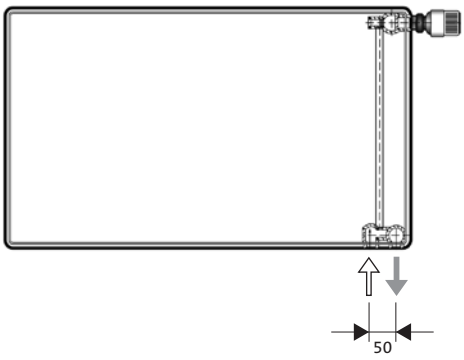
Connections

Bottom connection

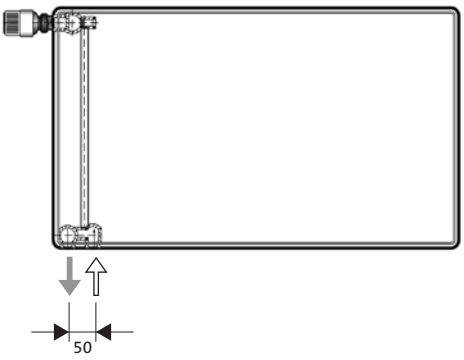
Thanks to the built in valve system, connection at the bottom is possible. Bottom right hand connection is standard, but left hand connection is possible, if specified at time of order.

Other connections are not possible.

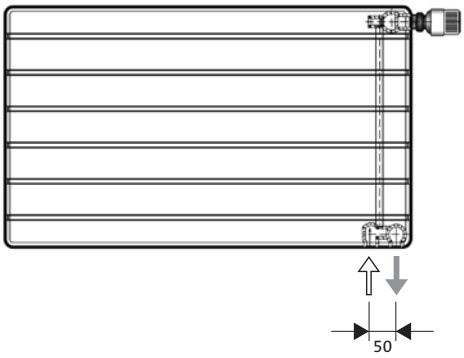
Kos H standard model – righthanded



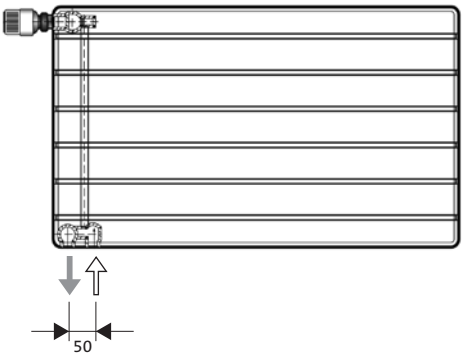
Kos H special model – lefthanded



Faro H standard model – righhanded

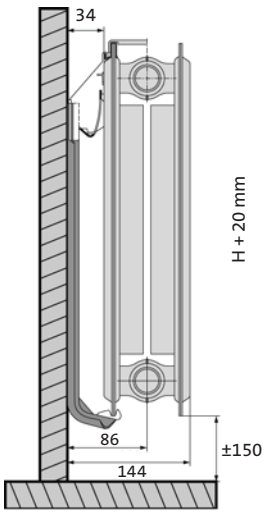


Faro H special model – lefthanded



Installation measures

KOH / FAH 21
KOH / FAH 22



Length and height are nominal values. Real values(height, length) + 20 mm.

Kos & Faro Vertical

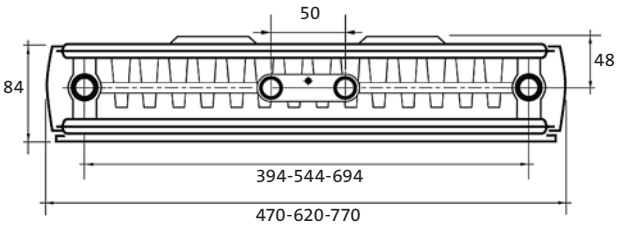
Technical data

Construction	EN 442-1
Material	Cold rolled steelplate EN 10130
Surface treatment	Surface treatment in five steps: • Alkalic degreased • Phosphated • Dipped in primer (electrical); KAT • Coated with polyester-epoxy resin powder • Stoved (about 200°C) The surface treatment process follows the standard DIN 55900.
Standard colour	White, RAL 9016. Other colours p. 79. Models 1800 x 450, 1950 x 600 and 2100 x 750 also available in stainless steel (INOX).
Working pressure	6 bar
Connections	4 side connections 1/2" ISO 228 and 2 bottom connections, mid connection 1/2" ISO 228, distance 50 mm.
Certification	EN ISO 9001 and ISO 14001
Models	Kos V– flat front panel Faro V–profiled front panel
Height	1800, 1950 and 2100 mm
Length	450, 600 and 750 mm
Types	KOV 21 and FAV 21
Accessories	The radiator package includes brackets, 2 side plates, clips, installation model, 1/2" valve insert (M30), air vent, 3 blind plugs, screws and plugs.
Outputs	Outputs are found on our website www.purmo.fi. All outputs are logarhitmically calculated by the EN442-standard.
Other accessories	Towel rail available in brushed stainless steel.

Kos V is a vertival design radiator with a flat frontpanel. Faro V has a profiled front panel. Both radiators have curved lateral covers.

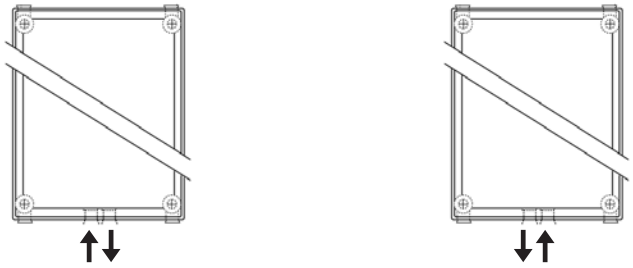
Radiator types

KOV / FAV 21

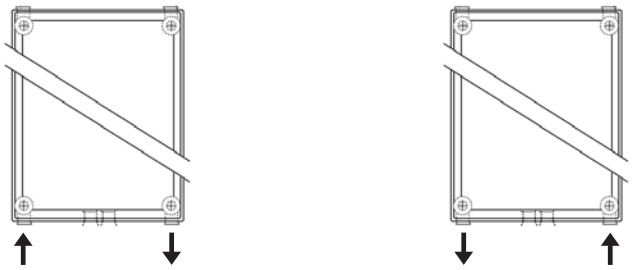


Connections

Midconnection

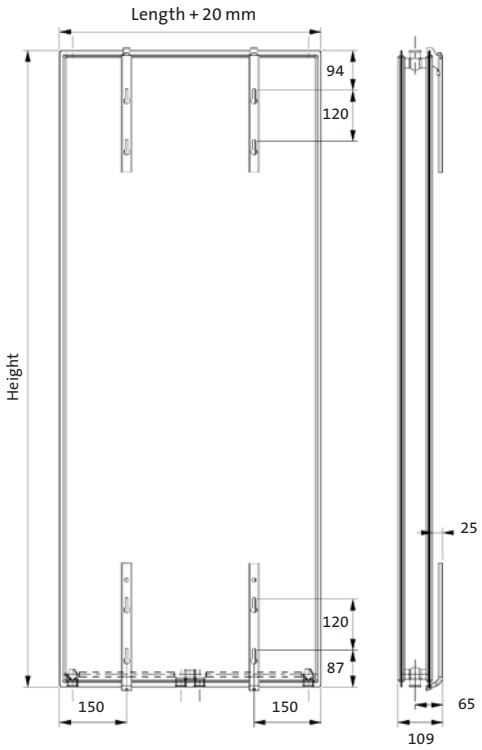


Bottom connection



Other connections are not possible.

Installations measures



Column radiators

General

Manufacture

The Delta Laserline radiators are manufactured using a unique laser welding process that virtually eliminates the visible welding points associated with the traditional methods of manufacturing this type of radiator. The clean finish significantly enhances the aesthetic qualities of the radiator.

Range

100 standard models with 20 heights and 5 depths.

Approval and certification

All Delta Laserline radiators are manufactured and tested to EN 442.

Paint finish

Every radiator undergoes a multi stage pretreatment process followed by an epoxy polyester primer coating. A stoved epoxy polyester powder coat in white (RAL 9016) is applied to all front and rear surfaces allowing the Delta Laserline to be fitted without further painting. Other colours are available on request.

Application

Column radiators are for use on two-pipe, pumped, indirect, domestic and commercial central heating installations, with a maximum working temperature of 120˚C.

The installation work must be carried out in accordance with recognised good practice, and precautions taken to avoid contamination which could lead to corrosion.

Tube details

Precision, D-profile steel tube is used for all outside surfaces which ensures high outputs and soft, rounded edges for maximum safety.

Water connections

Standard:- 4 x ½". Radiators include plug and vent. Other welded connection available on request.

Pressure testing

All Delta Laserline radiators are made for a 10 bar working pressure.

Heat outputs

The heat outputs of all Delta Laserline radiators are in accordance with EN 442.

Other models

The Delta Laserline radiators can be integrated into Bench and Bar models. Delta Twin is a bathroom radiator that can be supplied with an electrical element to heat the bathroom, when the central heating is off.

Guarantee

Each PURMO radiator is guaranteed for 10 years from the date of installation against defects caused by faulty materials or manufacture. The the defective product is replaced by a similiar or technically corresponding radiator.

The guarantee does not cover damages that are due to faulty storage and handling at delivery or installation, nor damages that are due to faulty use of the radiator, such as inside and outside rust, use of corrosive substances, too high pressure or damage due to freezing.

The guarantee does not cover incidental damages caused by the PURMO product, costs for change of product, production loss of the customer, unreceived profit or other indirect costs.

In case of a guarantee claim the buyer must contact the seller and present some kind of evidence of purchase of the product, for example, order confirmation, delivery note or identification number of the radiator. The defective product always has to be sent back to Rettig Värme Ab for inspectation within one month from the day of complaint, if not otherwise agreed upon.

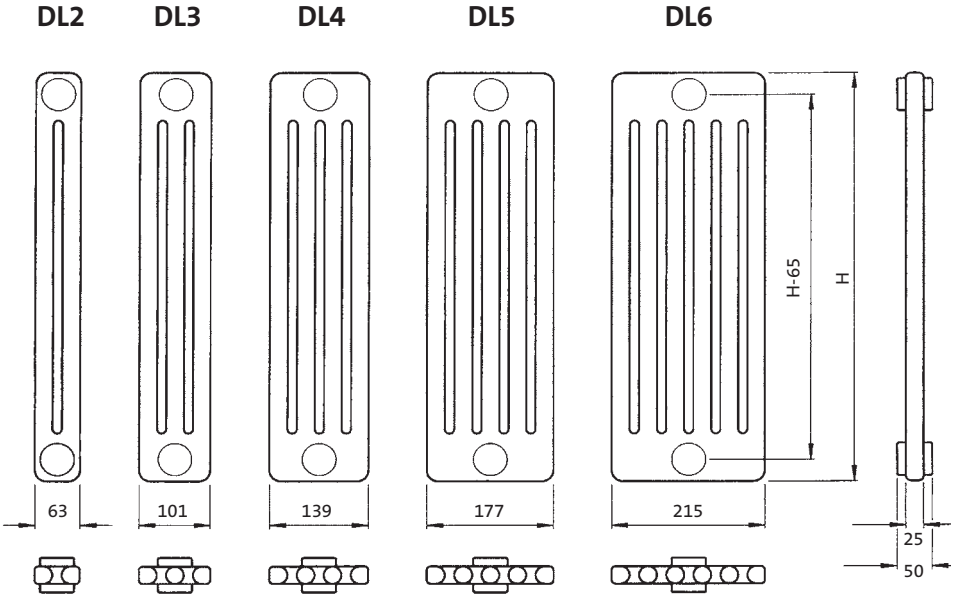
Delta Laserline

Technical data

Construction	EN 442-1
Material	Cold rolled steelplate EN 10130
Surface treatment	Surface treatment in five steps: • Alkalic degreased • Phosphated • Dipped in primer (electrical); KAT • Coated with polyester-epoxy resin powder • Stoved (about 200°C) The surface treatment process follows the standard DIN 55900.
Standard colour	White, RAL 9016. Other colours see p. 79.
Working pressure	10 bar
Connections	1/2" ISO 228, inner threads
Certification	ISO 9001 and ISO 14001
Standard heights	155–3 000 mm
Length	1 column = 50 mm
Types	DL2, DL3, DL4, DL5, DL6

Radiators can now be a stylish feature of room design rather than just a functional item. The Delta Laserline range is at the forefront of this trend, turning the humble radiator into a focal point.

Radiator types

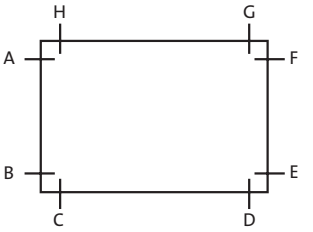


The Delta Laserline structure is based on columns (2 – 6 pcs). Measures in mm. C/C = H-65 mm

Delta Laserline connections

The Delta Laserline radiators have 4 end connections and also connections on bottom or top. The connections and connection measures (see table) should be stated in the order.

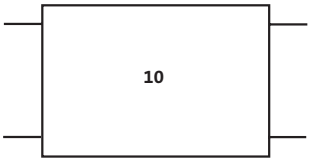
1"	Original inner thread
3/4"	Connection plug
1/2"	Connection plug (standard, if nothing else stated)
3/8"	Connection plug



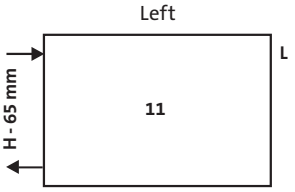
Connections

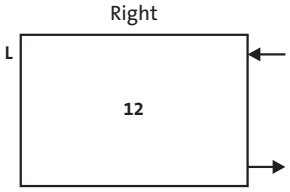
Delta Laserline - Standard connection 10

Delta Laserline connection type 10 can be connected in 4 different ways: Connection type 11, 12, 13 and 14. Connection type 10 has 4 x ½" connections and is supplied with one air vent and one blind plug.

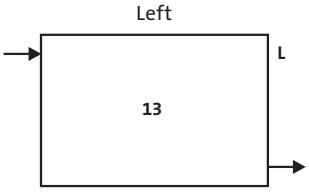


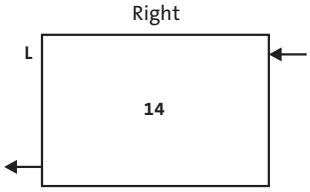
Same end connection





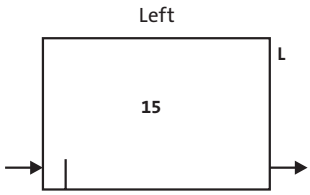
Flow through connection

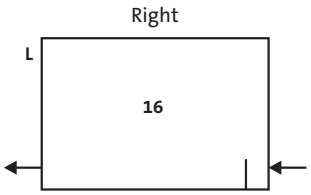




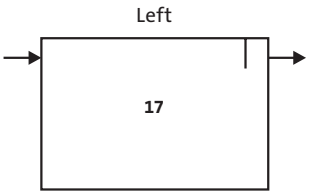
Other standard connections

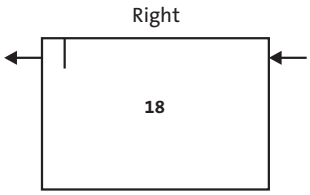
Bottom-Bottom opposite ends



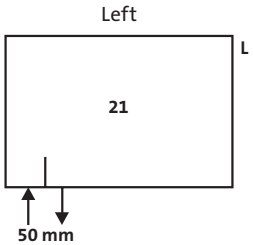


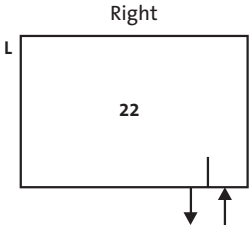
Top-Top opposite ends



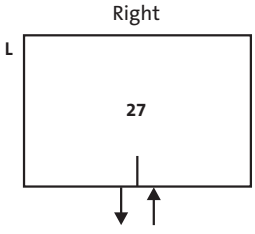


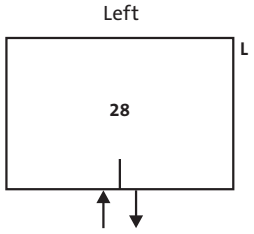
Bottom connection





Midconnection



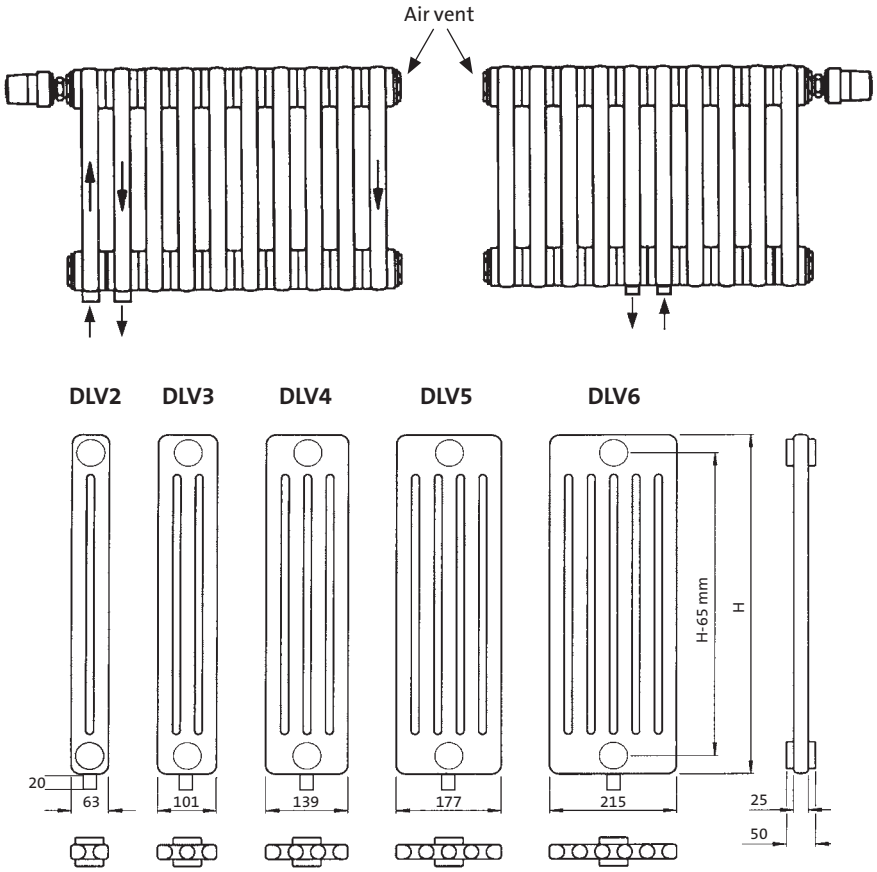


L = air vent
| = diverter

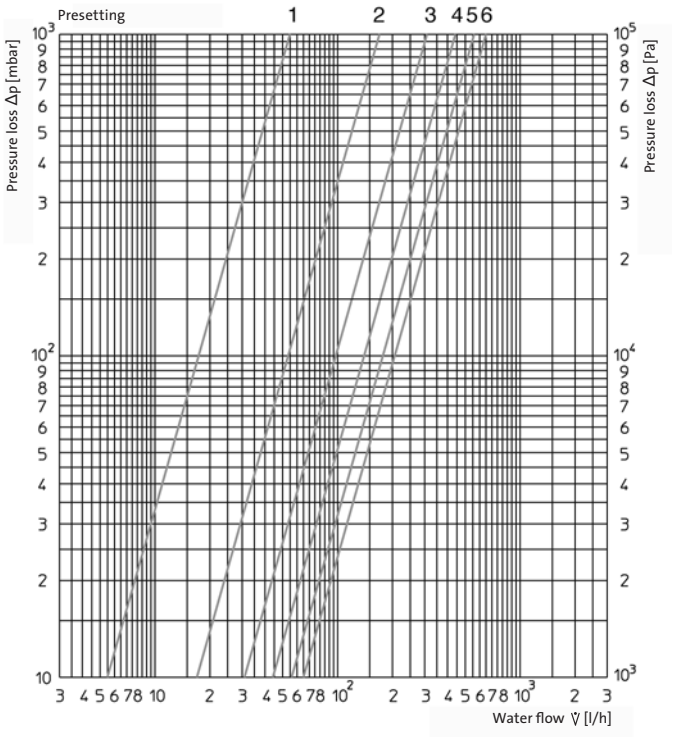
Note! *These models do not have an integrated valve insert.*

Delta Laserline Ventil

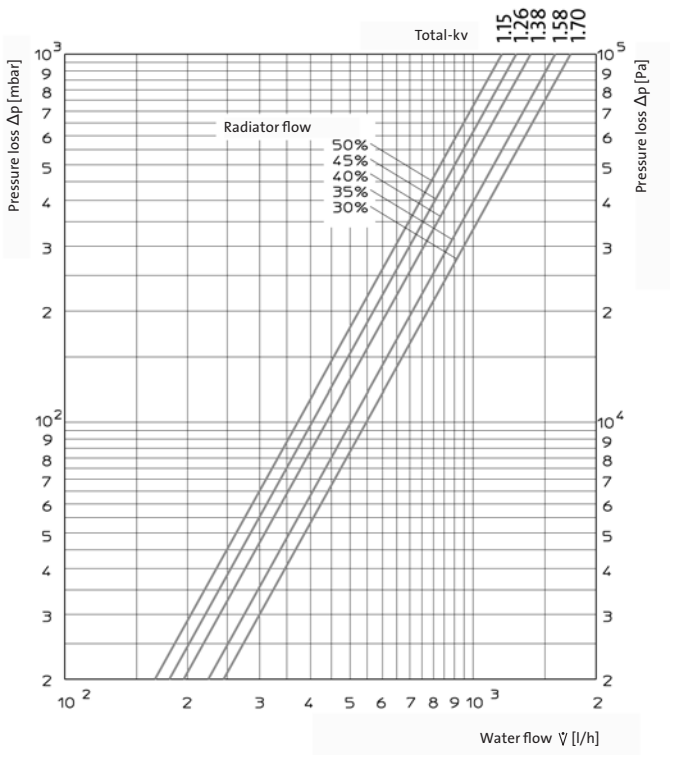
The Ventil model is supplied with 2 bottom connections, ½" inner threads and integrated valve assembly. Air vent on opposite side. All other connections are plugged. The radiator can be turned: left – right. A valve insert M30 x 1,5 is assembled.



Pressure loss



2-pipe connection presetting values and pressure loss (radiator and integrated valve assembly included).

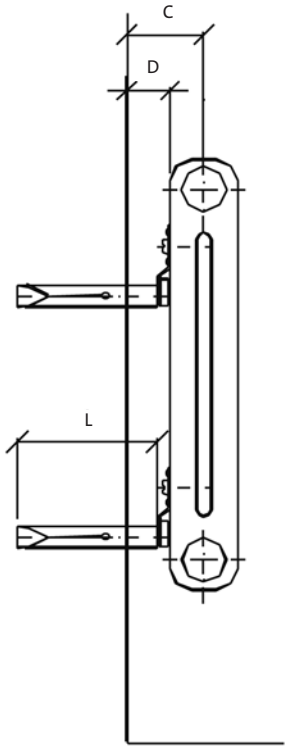


Pressure loss for 1-pipe systems with different flows. The pressure loss includes the connection valve, the integrated valve and the radiator. The integrated valve pretted at level 6.

ES	1	2	3	4	5	6
k_v	0,055	0,171	0,313	0,446	0,56	0,65

Installation

A. Bracket type RA/RH for concrete walls



RA/RH recommended amounts (pieces)

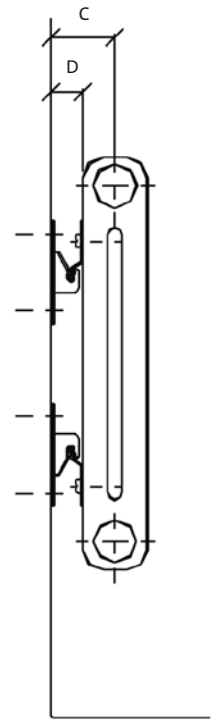
Number of sections	DL 2–4	DL 5–6
–20	2+2	3+3
21–30	4+4	5+5
31–50	5+5	7+7
51–70	7+7	8+8
71–90	8+8	10+10

Bracket pairs:
RA + RH up
RA + RH down

Measures	DL 2	DL 3	DL 4	DL 5	DL 6
D	20–65	20–65	20–65	20–65	20–65
C	52–97	71–116	90–135	109–154	129–173

Note!
- The length L of the RA bracket need to be mentioned in the order.
- The minimum distances from RH radiator support to to the radiator edge is 120 mm.
- At installation the RA brackets are mounted at wanted wall distance and tightened after the radiator is put in place.
- Brackets are delivered in the same colour as the radiator, if possible. Other colours and surface treatmentes must be stated in the order.

B. Bracket type RS/RH for ”plaster plate” walls



RS/RH -recommended amounts (pieces)

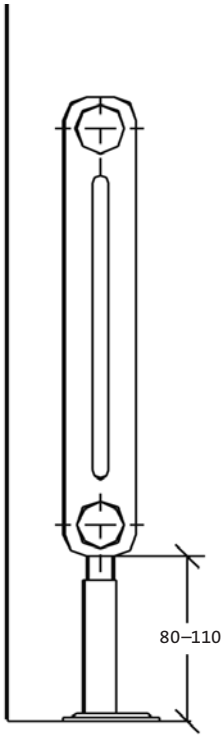
Number of sections	DL 2–4	DL 5–6
–20	2+2	3+3
21–30	3+3	4+4
31–50	4+4	6+6
51–70	5+5	7+7
71–90	6+6	9+9

Bracket pairs:
RS + RH up
RS + RH down

Measures	DL 2	DL 3	DL 4	DL 5	DL 6
D	30	30	30	30	30
C	62	81	100	119	138

Note!
- Brackets are delivered in the same colour as the radiator, if possible. Other colours and surface treatments must be stated in the order.

C. Bracket type FK – floor fixing bracket for radiator heights ≤ 1 000 mm



Recommended amounts of FK brackets

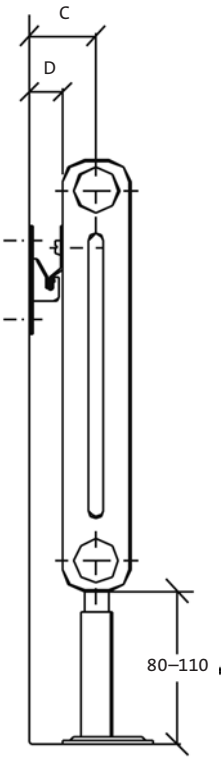
Number of sections	DL 2–4	DL 5–6
–20	2	2
21–30	3	3
31–50	4	4
51–70	5	7
71–90	6	9

Bracket pairs: one FK-floor fixing bracket

Note!

- The wall distance depend on the installation measures and the radiator depth.
- Brackets are delivered in the same colour as the radiator, if possible. Other colours and surface treatments must be stated in the order.

D. Bracket types RS/RH/FK – floor fixing bracket for high radiators



Recommended amounts of RS/RH/FK

Number of sections	DL 2–4		DL 5–6	
	FK	RS/RH	FK	RS/RH
–20	2	2+2	2	2+2
21–30	3	2+2	3	2+2
31–50	4	2+2	4	2+2
51–70	5	3+3	7	3+3
71–90	6	3+3	9	3+3

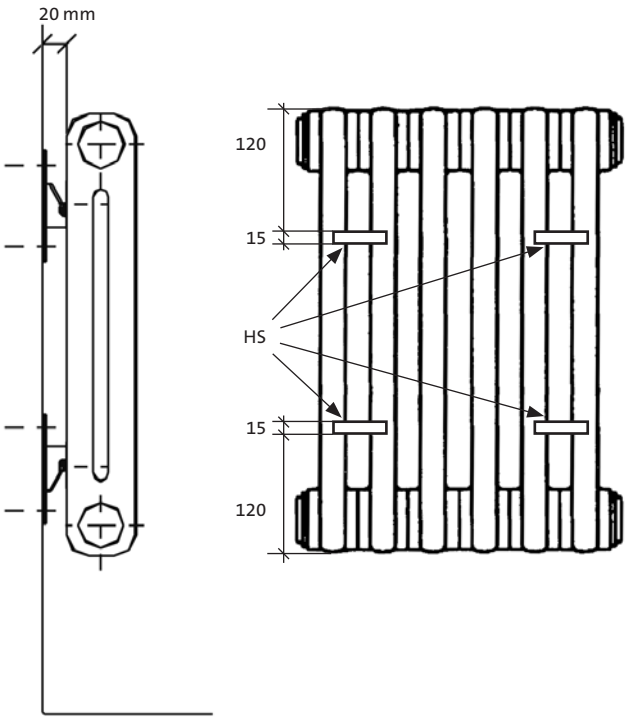
Bracket pairs: RS + RH up FK down

Measures	DL 2	DL 3	DL 4	DL 5	DL 6
D	30	30	30	30	30
C	62	81	100	119	138

Note!

- The minimum distance between the RH bracket and the radiator edge is 120 mm.
- Brackets are delivered in the same colour as the radiator, if possible. Other colours and surface treatments must be stated in the order.

E. Bracket types RS/HS – wall bracket



Recommended amounts of RS/HS

Column amount	DL 2–4
0–20	4
21–36	6
37–52	8
53–68	10

Bracket pair:
RS + HS up
RS + HS down

Column amount	DL 5–6 H > 2000	DL 5–6 H < 2000
0–14	4	4
15–24	6	6
25–34	8	8
35–44	10	12
45–54	12	16

Note!

- The HS bracket is welded onto the radiators´ backside. (”Laschen”)

Heat output calculation models

If you want to use other temperatures then the ones in the following tables, please use the the model:

$$\phi = \phi_n \times (\Delta T/\Delta T_n)^n$$

where ϕ_n = Output with the excess temperature $\Delta T_n = 49{,}83$ K
ΔT = New excess temperature, K
n = temperature exponent

The logarhitmic excess temperature is calculated:

$$\Delta T = \frac{t_m - t_p}{\ln \frac{t_m - t_h}{t_p - t_h}}$$

where t_m = Flow Temperature, °C
t_p = Return Temperature, °C
t_h = Room Temperature, °C

Technical data per section 50 mm

DL2 / DLV2

Type	Height mm	Depth mm	Weight kg	Volume dm^3	Normoutput W Δt = 50°C	Output W 70/40/20°C	Exponent n
2016	155	63	0,31	0,27	12,7	7,6	1,2120
2030	300	63	0,54	0,40	25,2	15,0	1,2243
2035	350	63	0,62	0,44	29,0	17,2	1,2269
2040	400	63	0,70	0,49	32,6	19,4	1,2296
2045	450	63	0,78	0,53	36,3	21,5	1,2325
2050	500	63	0,86	0,57	39,9	23,6	1,2354
2055	550	63	0,94	0,62	43,5	25,7	1,2384
2057	565	63	0,96	0,63	44,5	26,3	1,2393
2060	600	63	1,02	0,66	47,0	27,8	1,2415
2067	665	63	1,12	0,72	51,6	30,5	1,2457
2075	750	63	1,26	0,79	57,7	33,9	1,2513
2090	900	63	1,50	0,93	68,2	40,0	1,2615
2097	965	63	1,61	0,98	72,8	42,6	1,2660
2100	1 000	63	1,66	1,01	75,3	44,0	1,2684
2110	1 100	63	1,83	1,10	82,3	48,0	1,2754
2120	1 200	63	1,99	1,19	89,4	51,9	1,2823
2150	1 500	63	2,47	1,45	110,6	63,7	1,3023
2180	1 800	63	2,96	1,71	132,2	75,6	1,3197
2200	2 000	63	3,28	1,88	146,8	83,6	1,3289
2220	2 200	63	3,61	2,05	161,6	91,8	1,3356
2250	2 500	63	4,09	2,31	184,2	104,5	1,3398
2280	2 800	63	4,57	2,57	207,4	117,8	1,3354
2300	3 000	63	4,89	2,75	223,1	127,2	1,3267

DL3 / DLV3

Type	Height mm	Depth mm	Weight kg	Volume dm^3	Normoutput W Δt = 50°C	Output W 70/40/20°C	Exponent n
3016	155	101	0,46	0,39	17,5	10,4	1,2227
3030	300	101	0,79	0,57	35,4	21,1	1,2270
3035	350	101	0,91	0,64	40,5	24,0	1,2330
3037	365	101	0,94	0,65	42,0	24,9	1,2347
3040	400	101	1,02	0,70	45,5	26,9	1,2388
3042	415	101	1,06	0,72	47,0	27,8	1,2405
3045	450	101	1,14	0,76	50,5	29,8	1,2445
3050	500	101	1,25	0,83	55,4	32,6	1,2499
3055	550	101	1,37	0,89	60,3	35,4	1,2552
3057	565	101	1,40	0,91	61,7	36,2	1,2568
3060	600	101	1,48	0,95	65,1	38,2	1,2604
3067	665	101	1,63	1,04	71,3	41,7	1,2669
3075	750	101	1,83	1,15	79,4	46,3	1,2750
3090	900	101	2,18	1,34	93,6	54,2	1,2881
3097	965	101	2,33	1,42	99,7	57,7	1,2934
3100	1 000	101	2,41	1,47	103,0	59,5	1,2961
3107	1 065	101	2,56	1,55	109,1	62,9	1,3009
3110	1 100	101	2,64	1,60	112,3	64,7	1,3034
3120	1 200	101	2,87	1,73	121,7	69,9	1,3101
3150	1 500	101	3,57	2,11	149,8	85,4	1,3264
3180	1 800	101	4,27	2,49	178,1	101,1	1,3369
3200	2 000	101	4,73	2,74	197,1	111,7	1,3408
3220	2 200	101	5,20	2,98	216,3	122,5	1,3421
3250	2 500	101	5,91	3,35	245,4	139,2	1,3393
3280	2 800	101	6,61	3,70	275,1	156,6	1,3307
3300	3 000	101	7,09	3,93	295,2	168,7	1,3218

DL4 / DLV4

Type	Height mm	Depth mm	Weight kg	Volume dm³	Normoutput W Δt = 50°C	Output W 70/40/20°C	Exponent n
4016	155	139	0,62	0,51	22,8	13,6	1,2222
4030	300	139	1,05	0,75	45,6	27,1	1,2297
4035	350	139	1,20	0,83	52,0	30,8	1,2390
4037	365	139	1,24	0,85	54,0	31,9	1,2417
4040	400	139	1,35	0,91	58,4	34,4	1,2479
4042	415	139	1,39	0,94	60,3	35,5	1,2505
4045	450	139	1,50	1,00	64,7	38,0	1,2564
4050	500	139	1,65	1,08	70,9	41,5	1,2644
4055	550	139	1,80	1,16	77,0	45,0	1,2720
4057	565	139	1,84	1,19	78,9	46,0	1,2742
4060	600	139	1,95	1,25	83,1	48,4	1,2793
4067	665	139	2,14	1,36	91,0	52,7	1,2881
4075	750	139	2,40	1,50	101,2	58,4	1,2986
4090	900	139	2,85	1,75	118,9	68,2	1,3147
4097	965	139	3,05	1,86	126,6	72,4	1,3207
4100	1 000	139	3,15	1,92	130,7	74,6	1,3237
4107	1 065	139	3,35	2,03	138,3	78,8	1,3288
4110	1 100	139	3,45	2,09	142,4	81,0	1,3314
4120	1 200	139	3,75	2,26	154,0	87,4	1,3378
4150	1 500	139	4,66	2,77	189,0	106,7	1,3504
4180	1 800	139	5,57	3,27	223,9	126,2	1,3541
4200	2 000	139	6,18	3,60	247,4	139,5	1,3526
4220	2 200	139	6,80	3,92	270,9	153,1	1,3485
4250	2 500	139	7,72	4,38	306,6	174,0	1,3387
4280	2 800	139	8,66	4,82	342,8	195,5	1,3260
4300	3 000	139	9,29	5,10	367,3	210,3	1,3169

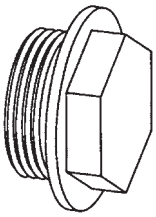
DL5 / DLV5

Type	Height mm	Depth mm	Weight kg	Volume dm³	Normoutput W Δt = 50°C	Output W 70/40/20°C	Exponent n
5016	155	177	0,77	0,62	28,7	17,0	1,2413
5030	300	177	1,31	0,93	56,0	33,1	1,2410
5035	350	177	1,49	1,03	64,0	37,7	1,2488
5037	365	177	1,54	1,07	66,4	39,1	1,2510
5040	400	177	1,67	1,14	71,9	42,2	1,2562
5045	450	177	1,86	1,25	79,6	46,6	1,2634
5050	500	177	2,04	1,35	87,3	51,0	1,2702
5055	550	177	2,22	1,46	94,9	55,3	1,2767
5057	565	177	2,28	1,49	97,2	56,6	1,2786
5060	600	177	2,41	1,56	102,5	59,5	1,2829
5067	665	177	2,65	1,70	112,2	65,0	1,2905
5075	750	177	2,96	1,87	124,8	72,0	1,2997
5090	900	177	3,52	2,18	146,8	84,2	1,3139
5100	1 000	177	3,89	2,39	161,3	92,2	1,3220
5107	1 065	177	4,13	2,52	170,7	97,3	1,3267
5110	1 100	177	4,26	2,59	175,8	100,1	1,3290
5120	1 200	177	4,63	2,80	190,2	108,1	1,3350
5150	1 500	177	5,75	3,41	233,2	131,8	1,3469
5180	1 800	177	6,87	4,02	276,1	155,9	1,3504
5200	2 000	177	7,62	4,44	304,9	172,2	1,3486
5220	2 200	177	8,38	4,85	333,7	188,9	1,3437
5250	2 500	177	9,52	5,49	377,2	214,7	1,3312
5280	2 800	177	10,66	6,14	421,2	241,6	1,3131
5300	3 000	177	11,43	6,58	450,8	260,1	1,2985

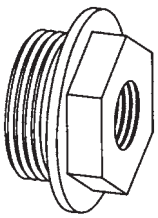
DL 6 / DLV6

Type	Height mm	Depth mm	Weight kg	Volume dm^3	Normoutput W Δt = 50°C	Output W 70/40/20°C	Exponent n
6016	155	215	0,92	0,75	34,8	20,6	1,2359
6030	300	215	1,56	1,11	66,4	39,1	1,2523
6035	350	215	1,78	1,24	75,9	44,6	1,2585
6037	365	215	1,84	1,28	78,8	46,2	1,2603
6040	400	215	2,00	1,37	85,3	50,0	1,2645
6042	415	215	2,06	1,41	88,1	51,5	1,2663
6045	450	215	2,21	1,50	94,6	55,2	1,2703
6050	500	215	2,43	1,62	103,8	60,5	1,2759
6055	550	215	2,65	1,75	112,8	65,6	1,2813
6057	565	215	2,72	1,79	115,5	67,1	1,2829
6060	600	215	2,87	1,88	121,8	70,7	1,2865
6067	665	215	3,15	2,04	133,4	77,2	1,2929
6075	750	215	3,52	2,25	148,5	85,6	1,3008
6090	900	215	4,18	2,61	174,7	100,2	1,3131
6097	965	215	4,47	2,77	185,9	106,4	1,3179
6100	1000	215	4,62	2,85	192,0	109,8	1,3203
6107	1065	215	4,91	3,01	203,2	115,9	1,3245
6110	1100	215	5,06	3,09	209,2	119,3	1,3266
6120	1200	215	5,50	3,33	226,3	128,7	1,3321
6150	1500	215	6,83	4,05	277,4	157,1	1,3433
6180	1800	215	8,17	4,78	328,4	185,7	1,3467
6200	2000	215	9,06	5,28	362,3	205,1	1,3446
6220	2200	215	9,96	5,79	396,4	224,9	1,3389
6250	2500	215	11,31	6,59	447,8	255,7	1,3236
6280	2800	215	12,67	7,45	499,5	288,1	1,3002
6300	3000	215	13,58	8,06	534,3	310,8	1,2800

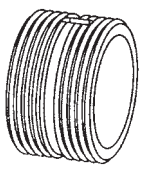
Accessories



Blanking plug 1"



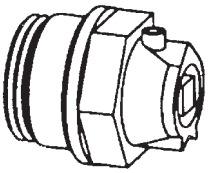
Connecting plug 1"–1/2"



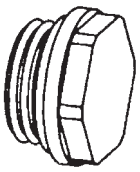
Nipple (connecting screw)

Section washer

Plug washer



Air vent 1/2"



Blanking plug 1/2"

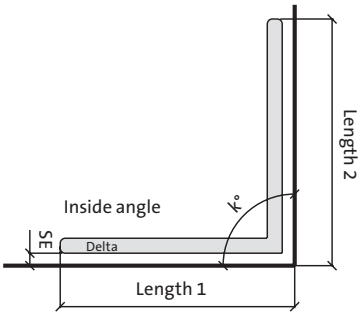
Order template

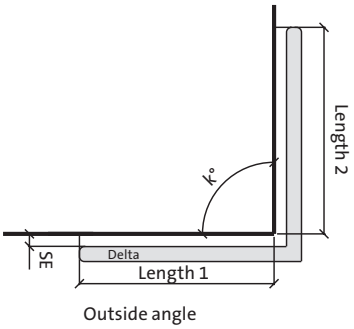
EXAMPLE **DL 4 – 600 – 16 – 10 – B – 9016**

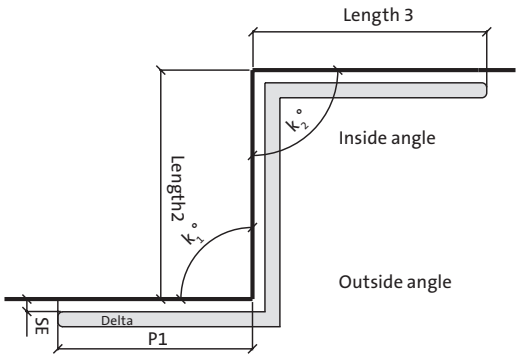
Type (DL 2–6 or DLV 2–6)
Height (mm)
Length (number of sections)
Connection (see p. 54)
Bracket type (see p. 56)
Colour (Standardcolour RAL 9016, other colours p. 79)

Curved or angled radiators

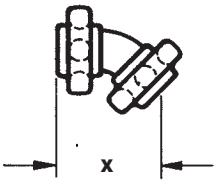
The Delta radiators are also available as curved or angled radiators. Drawings of the building are good to attach to the order, so that the exact measures for the radiators can be obtained.



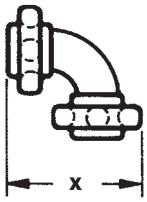




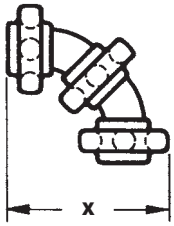
The curved and bended models are made with the help of angled connection parts.
Other parts than those mentioned in the table are available on request.



Angle 45°



Inside 90°

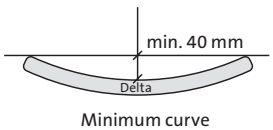


Outside 90°

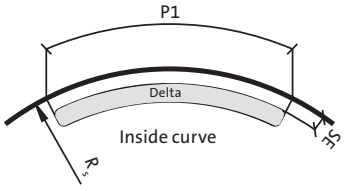
Max X mm	DL 2	DL 3	DL 4	DL 5	DL 6
Angle 45°	110	120	133	148	163
Inside 90°	135	154	190	227	266
Outside 90°	153	184	222	262	302

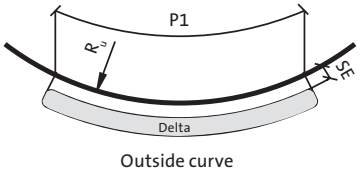
Minimum curve for the wall

DL 2–6 R≥ 1 100 mm



Minimum curve



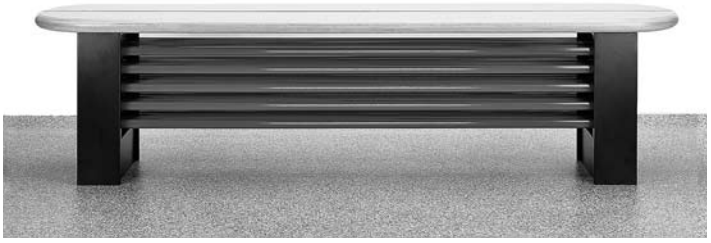


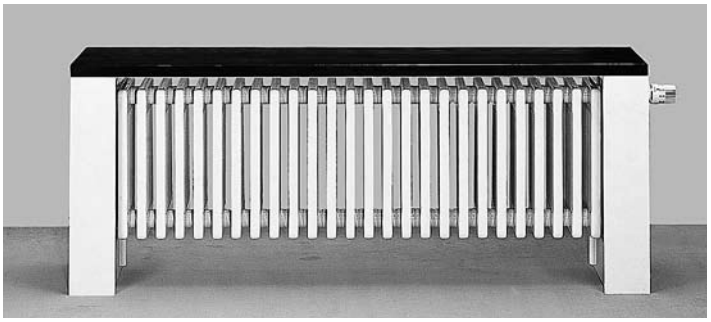
Outside curve

Delta Bench Horizontal & Vertical

The structure of the columns in the bench radiator can be either horizontal or vertical. There is an integrated valve, suitable for thermostatic heads M30 x 1,5, inside the radiator. The wooden top plate can be ordered only for the horizontal benches.

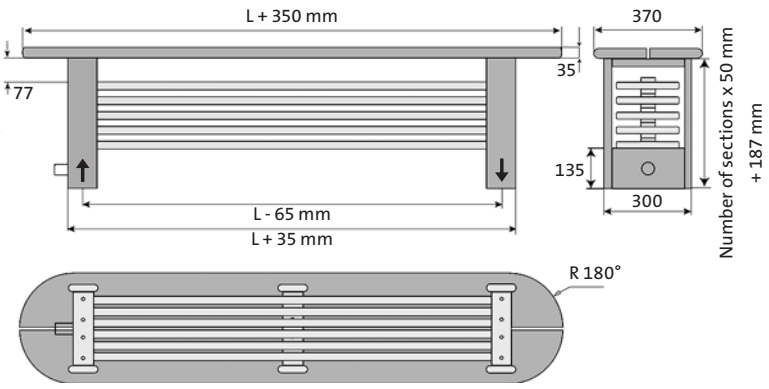
- Laser welding results in barely visible welded joints.
- There is an integrated valve, suitable for thermostatic heads M30 x 1,5, inside the radiator.
- Right or left-handed bottom connection, 2 x ½" inner thread.
- The radiator can be turned.
- The floor brackets can be regulated and cover the pipe connections. They are also attached to the top plate.



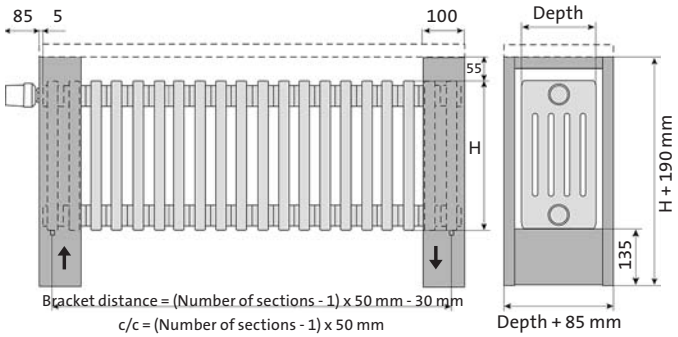


Installation measures

Delta Bench Horizontal



Delta Bench Vertical



Delta Bench Horizontal

Type	Number of sections	Length mm	Height mm	Depth mm	Normoutput W Δt = 50°C	Output W 70/40/20°C
23-04-6150	4	1 850 (1 500)	387 (200)	300 (215)	1 411	808
23-05-6150	5	1 850 (1 500)	437 (250)	300 (215)	1 742	1 015
23-06-6150	6	1 850 (1 500)	487 (300)	300 (215)	1 934	1 122
23-07-6150	7	1 850 (1 500)	537 (350)	300 (215)	2 204	1 278
23-04-6180	4	2 150 (1 800)	387 (200)	300 (215)	1 696	974
23-05-6180	5	2 150 (1 800)	437 (250)	300 (215)	2 097	1 220
23-06-6180	6	2 150 (1 800)	487 (300)	300 (215)	2 337	1 357
23-07-6180	7	2 150 (1 800)	537 (350)	300 (215)	2 670	1 544
23-04-6200	4	2 350 (2 000)	387 (200)	300 (215)	1 886	1 085
23-05-6200	5	2 350 (2 000)	437 (250)	300 (215)	2 334	1 357
23-06-6200	6	2 350 (2 000)	487 (300)	300 (215)	2 606	1 513
23-07-6200	7	2 350 (2 000)	537 (350)	300 (215)	2 982	1 720
23-04-6250	4	2 850 (2 500)	387 (200)	300 (215)	2 362	1 363
23-05-6250	5	2 850 (2 500)	437 (250)	300 (215)	2 929	1 699
23-06-6250	6	2 850 (2 500)	487 (300)	300 (215)	3 285	1 910
23-07-6250	7	2 850 (2 500)	537 (350)	300 (215)	3 770	2 163
23-04-6280	4	3 150 (2 800)	387 (200)	300 (215)	2 648	1 532
23-05-6280	5	3 150 (2 800)	437 (250)	300 (215)	3 287	1 904
23-06-6280	6	3 150 (2 800)	487 (300)	300 (215)	3 695	2 150
23-07-6280	7	3 150 (2 800)	537 (350)	300 (215)	4 247	2 429

Note! In parenthesis measures without top plate and brackets.

Delta Bench Horizontal top plate

Type	Length mm	Width mm	Thickness mm
23-04-6150..23-07-6150	1 850	370	35
23-04-6180..23-07-6180	2 150	370	35
23-04-6200..23-07-6200	2 350	370	35
23-04-2500..23-07-6250	2 850	370	35
23-04-6280..23-07-6280	3 150	370	35

Delta Bench Vertical

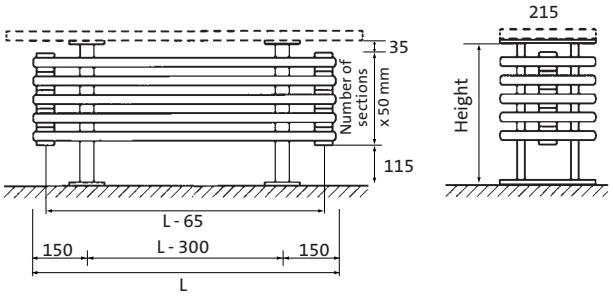
Type	Number of sections	Length mm	Height mm	Depth mm	Normoutput W Δt = 50°C	Output W 70/40/20°C
23-20-4030	20	1 100 (1 000)	490 (300)	224 (139)	912	542
23-24-4030	24	1 300 (1 200)	490 (300)	224 (139)	1 094	650
23-28-4030	28	1 500 (1 400)	490 (300)	224 (139)	1 277	759
23-20-5030	20	1 100 (1 000)	490 (300)	262 (177)	1 120	662
23-24-5030	24	1 300 (1 200)	490 (300)	262 (177)	1 344	795
23-28-5030	28	1 500 (1 400)	490 (300)	262 (177)	1 568	927
23-20-4035	20	1 100 (1 000)	540 (350)	224 (139)	1 040	615
23-24-4035	24	1 300 (1 200)	540 (350)	224 (139)	1 248	739
23-28-4035	28	1 500 (1 400)	540 (350)	224 (139)	1 456	862
23-20-5035	20	1 100 (1 000)	540 (350)	262 (177)	1 280	754
23-24-5035	24	1 300 (1 200)	540 (350)	262 (177)	1 536	905
23-28-5035	28	1 500 (1 400)	540 (350)	262 (177)	1 792	1 056

Note! In parenthesis measures without top plate.

Delta Bench External

The Delta Bench External has no integrated valve, but is connected with external valves. The column structure is horizontal, and this bench is always delivered without top plate.

Installation measures



Type	Number of sections	Lenth mm	Height mm	Depth mm	Normoutput W Δt = 50°C	Output W 70/40/20°C
04-6100	4	1 000	350 (200)	215	768	443
05-6100	5	1 000	400 (250)	215	960	554
06-6100	6	1 000	450 (300)	215	1 152	664
07-6100	7	1 000	500 (350)	215	1 344	775
04-6120	4	1 200	350 (200)	215	905	522
05-6120	5	1 200	400 (250)	215	1 132	653
06-6120	6	1 200	450 (300)	215	1 358	783
07-6120	7	1 200	500 (350)	215	1 584	913
04-6150	4	1 500	350 (200)	215	1 411	814
05-6150	5	1 500	400 (250)	215	1 742	1005
06-6150	6	1500	450 (300)	215	1 934	1115
07-6150	7	1 500	500 (350)	215	2 204	1271
04-6180	4	1 800	350 (200)	215	1 696	978
05-6180	5	1 800	400 (250)	215	2 097	1209
06-6180	6	1 800	450 (300)	215	2 337	1348
07-6180	7	1 800	500 (350)	215	2 670	1540
04-6200	4	2 000	350 (200)	215	1 886	1088
05-6200	5	2 000	400 (250)	215	2 334	1346
06-6200	6	2 000	450 (300)	215	2 606	1503
07-6200	7	2 000	500 (350)	215	2 982	1720
04-6250	4	2 500	350 (200)	215	2 362	1362
05-6250	5	2 500	400 (250)	215	2 929	1689
06-6250	6	2 500	450 (300)	215	3 285	1894
07-6250	7	2 500	500 (350)	215	3 770	2174
04-6280	4	2 800	350 (200)	215	2 648	1527
05-6280	5	2 800	400 (250)	215	3 287	1896
06-6280	6	2 800	450 (300)	215	3 695	2131
07-6280	7	2 800	500 (350)	215	4 247	2449

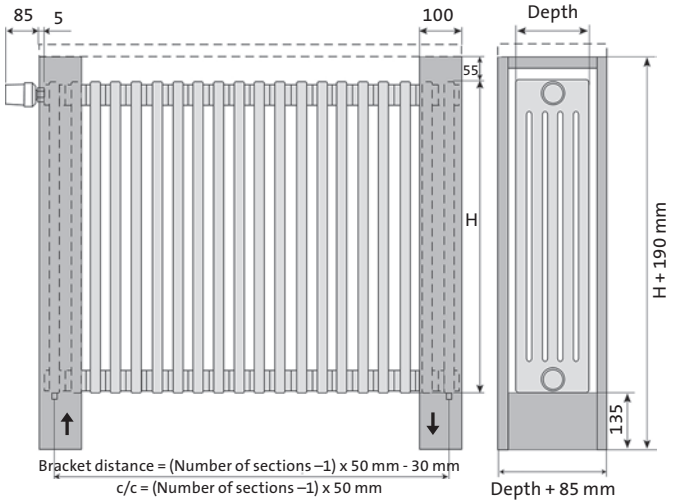
Note! In parenthesis measures without top plate.

Delta Bar

Delta Bar has a vertical construction under the top plate and an integrated valve insert. Delta Bar is delivered without top plate, except for the raditor with 18 sections, where a wooden top plate is available.

- Fully laserwelded, steel column radiator. Pipe sections and end pieces are laserwelded to columns and blocks.
- Pipes are smoothed on the outside to obtain the characteristics Delta "D-tubular section". This results in higher heat outputs.
- Laser welding results in barely visible welded joints.
- There is an integrated valve, suitable for thermostatic heads M30 x 1,5, inside the radiator.
- Right or left-handed bottom connection, 2 x ½" inner thread.
- The radiator can be turned.
- The floor brackets can be regulated and cover the pipe connections. They are also attached to the top plate.

Installation measures



Type	Number of sections	Length mm	Height mm	Depth mm	Normoutput W Δt = 50°C	Output W 70/40/20°C
23-14-4075	14	800 (700)	940 (750)	224	1 417	818
23-18-4075	18	1 000 (900)	940 (750)	224	1 822	1 051
23-22-4075	22	1 200 (1100)	940 (750)	224	2 226	1 285
23-14-5075	14	800 (700)	940 (750)	262	1 747	1 008
23-18-5075	18	1 000 (900)	940 (750)	262	2 246	1 296
23-22-5075	22	1 200 (1100)	940 (750)	262	2 746	1 584
23-14-4090	14	800 (700)	1 090 (900)	224	1 665	954
23-18-4090	18	1 000 (900)	1 090 (900)	224	2 140	1 227
23-22-4090	22	1 200 (1100)	1 090 (900)	224	2 616	1 499
23-14-5090	14	800 (700)	1 090 (900)	262	2 055	1 178
23-18-5090	18	1 000 (900)	1 090 (900)	262	2 642	1 515
23-22-5090	22	1 200 (1100)	1 090 (900)	262	3 230	1 852

Note! In parenthesis measures without top plate.

PURMO

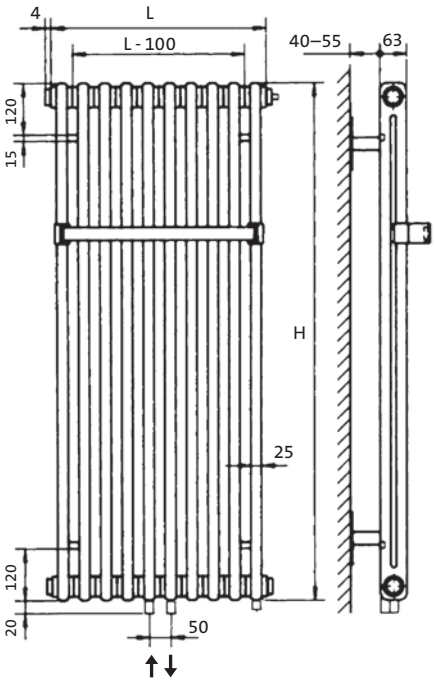
Delta Twin M

A fully laser-welded, steel column radiator, especially suitable for bathrooms. The radiator can be equipped with an electrical element, for use when the central heating normally is closed. For types 27-10-2100 a 700 W electrical element is used, for other types 900 W.

Delta Twin is a 2-column-radiator with connections bottom-left. A towel rail in the colour of the radiator with chromed end pieces, adjustable in height, is always included.

Delta Twin´s standard colour is RAL 9016.

Installation measures



Type	Number of sections	Length mm	Height mm	Normoutput W Δt = 50°C	Output W 70/40/20°C
27-10-2100	10	500	1 000	753	440
27-12-2100	12	600	1 000	904	528
27-10-2120	10	500	1 200	894	519
27-12-2120	12	600	1 200	1 073	623
27-10-2150	10	500	1 500	1 106	637
27-12-2150	12	600	1 500	1 327	764
27-10-2180	10	500	1 800	1 322	756
27-12-2180	12	600	1 800	1 586	907

Towel warmers

PURMO Towel Warmers combines the ultimate in comfort with proven design and attractive lines to enable you to bring a personal touch to your home.

All PURMO towel warmers are intended for either closed waterbased heating systems or electrical use. **Note! Not for tap water systems.**

Connection

Central Heating Model
The PURMO towel warmers are to be connected to closed central heating systems and they often cover the whole output need of a bathroom. Thanks to the elegant heater you will have a nice and warm towel after the shower and an efficient dryer as well as a lovely and warm bathroom.
A practical one-pipe valve (RFA69-1 or 70-2) enables either 1-pipe or 2-pipe-connections. Connection centre distance 40 mm. The more exclusive valve RFA75-400 is made of chromed brass. Note! M22 pipe connection.

Note! These models must not be connected to the tap water system.

One-pipe valve	**HEPAC code**
RFA 69-1	4036111
RFA 70-2	4036121
RFA 75-400	4036112

Sealed Electrical Model
Most towel warmers are available as sealed electrical ones, either with fixed installation or with wall plug. It is important that all electrical installations are made by authorized electricians. Please, state in the order in which upright you want the electrical element.

Electrical element	**HEPAC code**
E03-300	5530851
E03-600	5530861

Mixed models
In mixed versions both a one-pipe-valve and an electrical element is used. It is importanat to fill the radiator with water and empty it on air before use. The return valve must never be closed due to the expansion of water when heating up the radiator.

EO3 - 300/600

RFA 75-400

RFA 69-1 RFA 70-2

Guarantee

Each PURMO radiator is guaranteed for 10 years from the date of installation against defects caused by faulty materials or manufacture. The defective product is replaced by a similiar or technically corresponding radiator.

The guarantee does not cover damages that are due to faulty storage and handling at delivery or installation, nor damages that are due to faulty use of the radiator, such as inside and outside rust, use of corrosive substances, too high pressure or damage due to freezing.

The guarantee does not cover incidental damages caused by the PURMO product, costs for change of product, production loss of the customer, unreceived profit or other indirect costs.

In case of a guarantee claim the buyer must contact the seller and present some kind of evidence of purchase of the product, for example, order confirmation, delivery note or identification number of the radiator. The defective product always has to be sent back to Rettig Värme Ab for inspectation within one month from the day of complaint, if not otherwise agreed upon.

PURMO

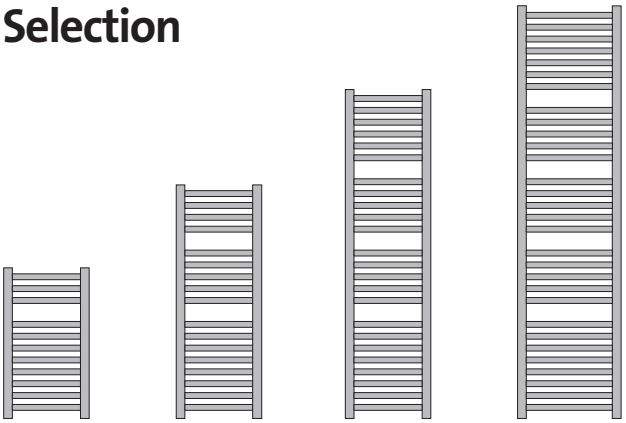
Flores

A BEAUTIFUL SOLUTION FOR SMALL SPACES

This classic towel warmer is ideal for any setting where you want understated elegance while maintaining top comfort. Available in many colours, it also comes in a chrome version for those who want extra shine. The Flores needs very little depth, making it ideal for small rooms – it can even be used as a room divider to help you make the most of your space. Working pressure 8 bar. Must not be connected to the tap water system.

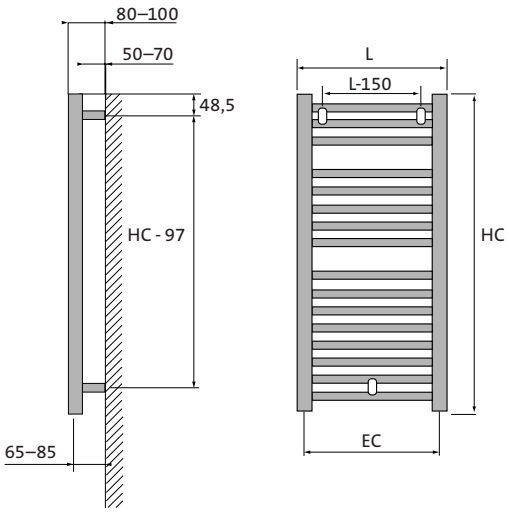
1/2" inner thread

Selection



FLO 0505 FLO 0805 FLO 1205 FLO 1506

Installation measures



Technical data

Type	HEPAC code	Number of horizontal pipes	Output W 70/40/20°C	Output W Δt = 50°C	Electrical element W	Length L	Height HC	Installation measures L-100	Installation measures HC-97	Connection m. EC
FLO 0505	5530211	11	148	257	300	500	547	350	450	455
FLO 0805	5530221	17	240	417	300	500	862	350	765	455
FLO 1205	5530231	24	332	576	300	500	1 222	350	1 125	455
FLO 1506	5530241	30	486	842	600	600	1 537	450	1 440	555
FLO 0805 CH	5530222	17	160	277	300	500	862	350	765	455
FLO 1205 CH	5530232	24	229	395	300	500	1 222	350	1 125	455
FLO 1506 CH	5530242	30	339	586	300	600	1 537	450	1 440	555

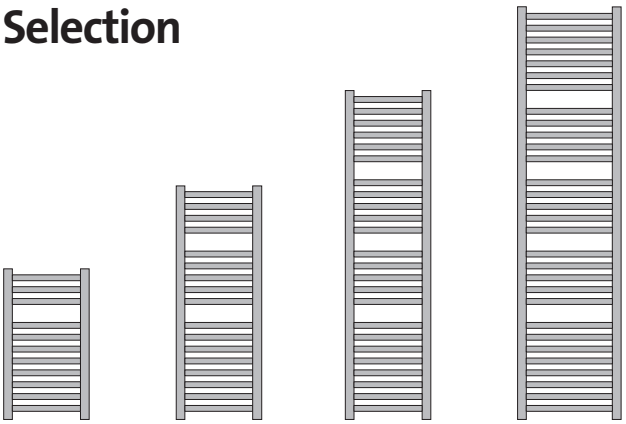
Flores C

FLUSH AGAINST THE WALL

The Flores C has curving horizontal pipes, putting a new face on a much-loved classic design. It retains all the other Flores benefits, including accessories to make installation flexible and easy. And, of course, the lovely warmth.
Standard colour is white, but also available in 250 different RAL-colours as well as in chrome (CH). Working pressure 8 bar. Must not be connected to the tap water system.

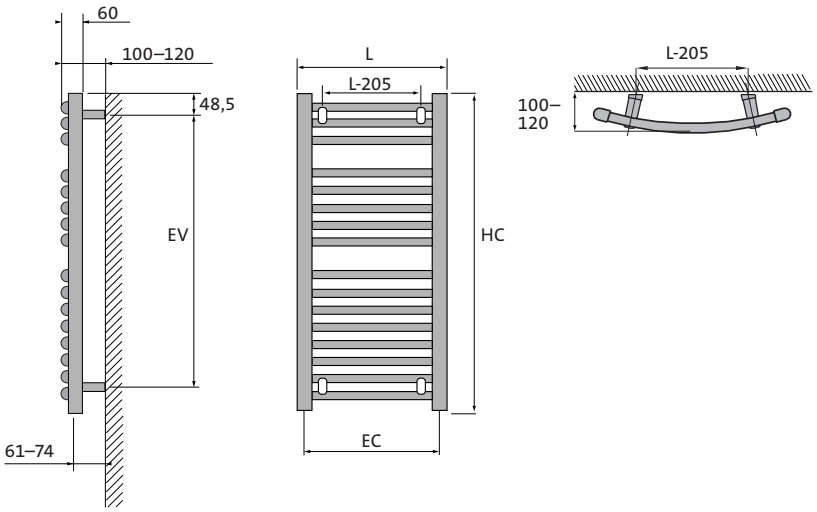
1/2" inner thread

Selection



FLC 0505 FLC 0805 FLC 1205 FLC 1506

Installation measures



Technical data

Type	HEPAC code	Number of horizontal pipes	Output W 70/40/20°C	Output W Δt = 50°C	Electrical element W	Length L	Height HC	Installation measures L-205	Installation measures HC-97	Connection m. EC
FLC 0505	5530261	11	153	265	300	500	547	295	450	450
FLC 0805	5530271	17	243	421	300	500	862	295	765	450
FLC 1205	5530281	24	339	587	300	500	1 222	295	1 125	450
FLC 1506	5530291	30	494	856	600	600	1 537	395	1 440	550
FLC 0805 CH	5530272	17	166	286	300	500	862	295	765	450
FLC 1205 CH	5530282	24	229	395	300	500	1 222	295	1 125	450
FLC 1506 CH	5530292	30	339	585	300	600	1 537	395	1 440	550

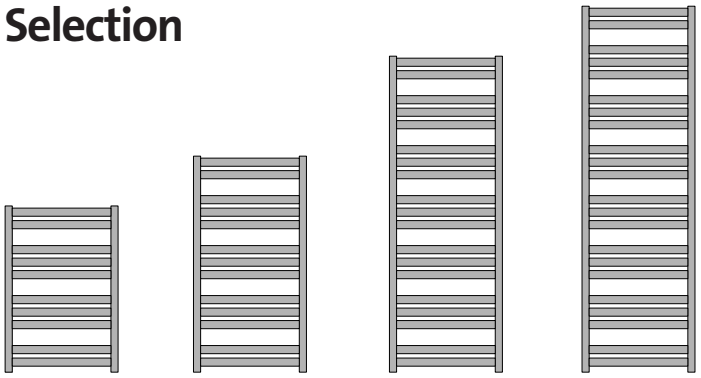
Java

LIGHT AND AIRY

Java is clearly a classic towel warmer, yet still feels special. The heat elements are elliptical and placed at an angle, giving the Java an airy feel. For full flexibility, the connections of the Java can be switched left or right to suit your installation needs. Available in 4 different heights and 2 lengths. Java is delivered in white or silver, but is also available in special colours. Java is our most sold towel warmer in Scandinavia. Working pressure 8 bar. Must not be connected to the tap water system.

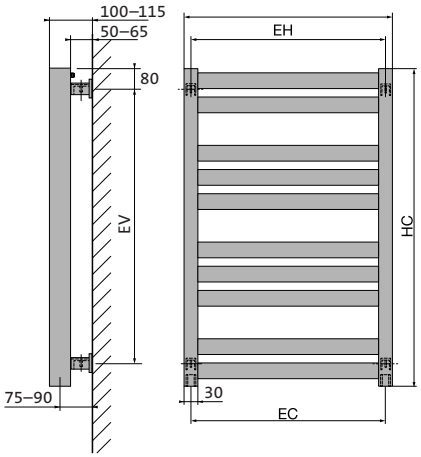
1/2" inner thread

Selection



JAV 0705 | JAV 0905 | JAV 1304/ JAV 1305 | JAV 1505

Installation measures



Technical data

Type	HEPAC code	Number of horizontal pipes	Output W 70/40/20°C	Output W Δt = 50°C	Electrical element W	Length L	Height HC	Installation measures L-100	Installation measures HC-97	Connection m. EC
JAV 0705	5530001	10	204	353	300	500	700	470	520	470
JAV 0905	5530011	13	264	458	300	500	912	470	750	470
JAV 1304	5530021	19	324	562	300	400	1 336	370	1 170	370
JAV 1305	5530031	19	385	667	300	500	1 336	470	1 170	470
JAV 1505	5530041	22	445	771	600	500	1 548	470	1 320	470
JAV 0705 SILVER	5530013	10	204	353	300	500	700	470	520	470
JAV 0905 SILVER	5530023	13	264	458	300	500	912	470	750	470
JAV 1304 SILVER	5530033	19	324	562	300	400	1 336	370	1 170	370
JAV 1305 SILVER	5530043	19	385	667	300	500	1 336	470	1 170	470

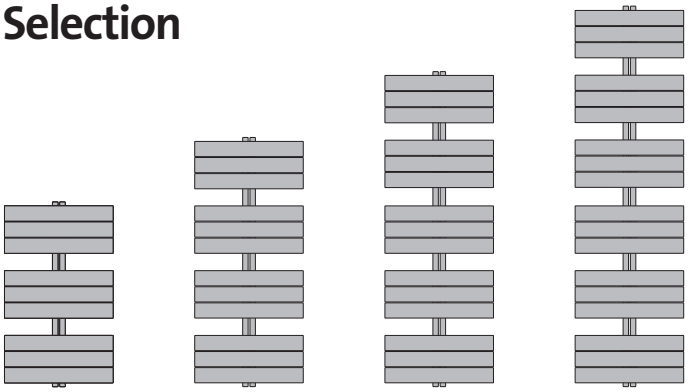
Apolima

PERFECT CURVES

The stylish curves of the Apolima are an asset to any room it graces. Designed to be the perfect towel warmer – the tiered design will accommodate plenty of towels, creating order out of chaos – the Apolima is also available in models powerful enough to heat up your kitchen. Use it to accentuate your style. Or as a focal point in its own right. A Mixed version is not possible.
Working pressure 4 bar. Must not be connected to the tap water system.

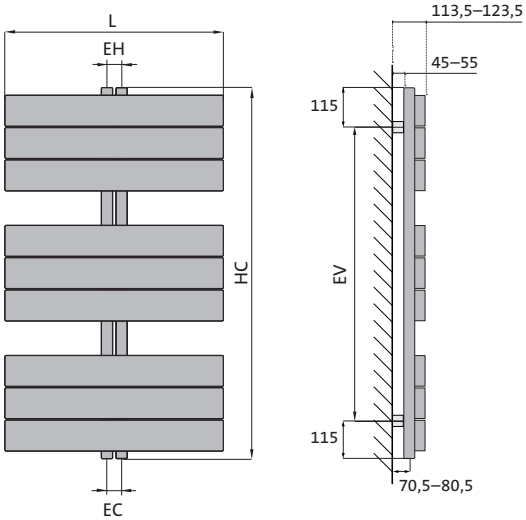
1/2" inner thread

Selection



APO 0805/ APO 0806 | APO 1106 | APO 1406 | APO 1708

Installation measures



Technical data

Type	HEPAC code	Number of horizontal pipes	Output W 70/40/20°C	Output W Δt = 50°C	Electrical element W	Length L	Height HC	Installation measures L-100	Installation measures HC-97	Connection m. EC
APO 0806	5530312	9	322	559	300	650	830	50	600	50
APO 1106	5530313	12	427	740	600	650	1 130	50	900	50
APO 1406	5530314	15	523	907	600	650	1 430	50	1 200	50
APO 1708	5530315	18	749	1 299	600	800	1 730	50	1 500	50

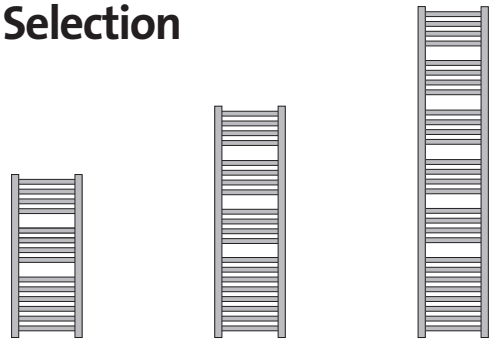
Minorca

A BLEND OF SHAPES

For those who want neither strict squares nor something completely round, the Minorca towel radiator is the answer. It combines both shapes to great effect: Flattened oval pipes form a gentle curve and meet a stringent straight line at both sides. The Minorca adds a touch of class to any bathroom. Standard colour is white, but available in 250 different RAL colours as well as two chromed versions (CH).
Working pressure 8 bar. Must not be connected to the tap water system.

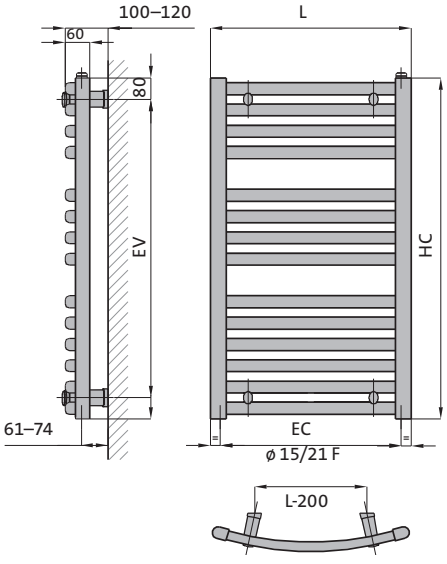
1/2" inner thread

Selection



MIN 0805 MIN 1205 MIN 1705

Installation measures



Technical data

Type	HEPAC code	Number of horizontal pipes	Output W 70/40/20°C	Output W Δt = 50°C	Electrical element W	Length L	Height HC	Installation measures L-100	Installation measures HC-97	Connection m. EC
MIN 0805	5530101	14	223	386	300	495	849	295	742	450
MIN 1205	5530111	20	316	549	300	495	1 220	295	1 113	450
MIN 1705	5530121	28	449	778	600	495	1 750	295	1 643	450
MIN 0805 CH	5530102	14	144	249	300	495	849	295	742	450
MIN 1705 CH	5530122	28	291	503	300	495	1 750	295	1 643	450

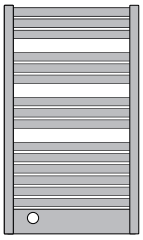
Ios

GOING AGAINST CONVENTIONS

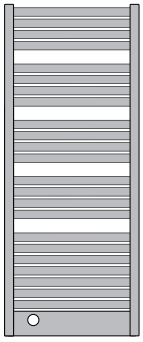
Who said pipes have to be round? The Ios range has completely flat horizontal pipes, but their straight rigidity is offset by an outward curve. The entire rail exudes good taste even though it is superbly restrained. The Ios has centre connections, making the installation point completely invisible. There is a valve in the towel warmer (M30). Working pressure 4 bar. Must not be connected to the tap water system.

1/2" inner thread

Selection

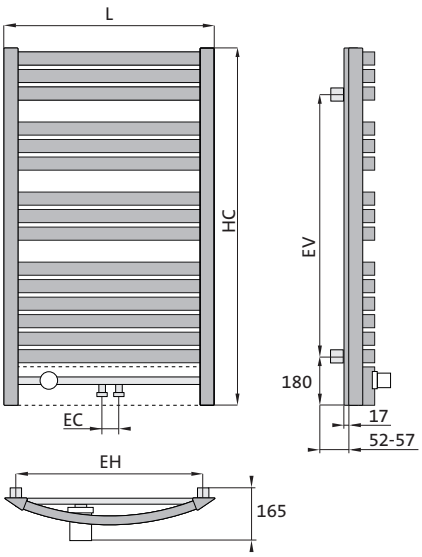


IOS 1206 M



IOS 1706 M

Installation measures



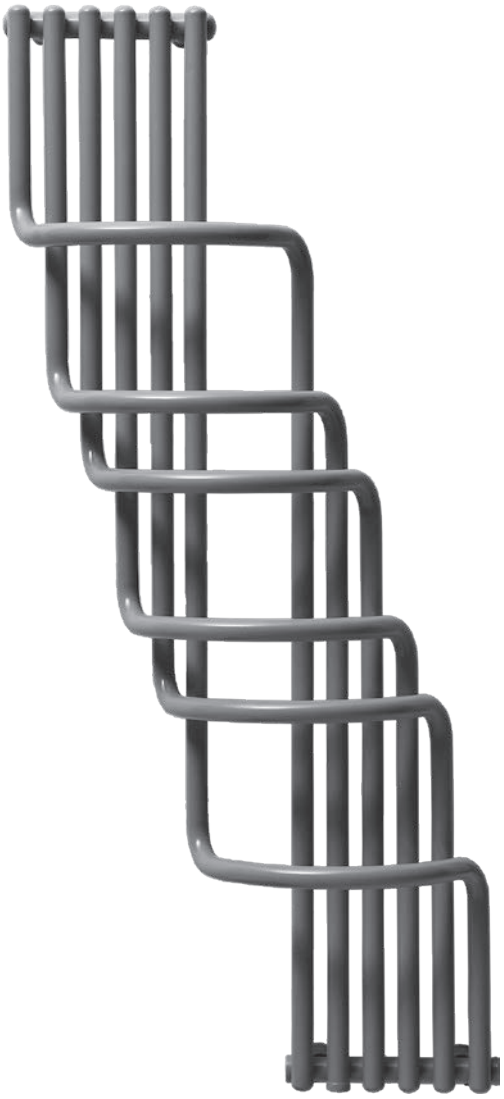
Technical data

Type	HEPAC code	Number of horizontal pipes	Output W 70/40/20°C	Output W Δt = 50°C	Electrical element W	Length L	Height HC	Installation measures L-100	Installation measures HC-97	Connection m. EC
IOS 1206 M	5530361	26	389	674	300	595	1 185	531	855	50
IOS 1706 M	5530362	23	580	1 005	600	595	1 698	531	1 311	50

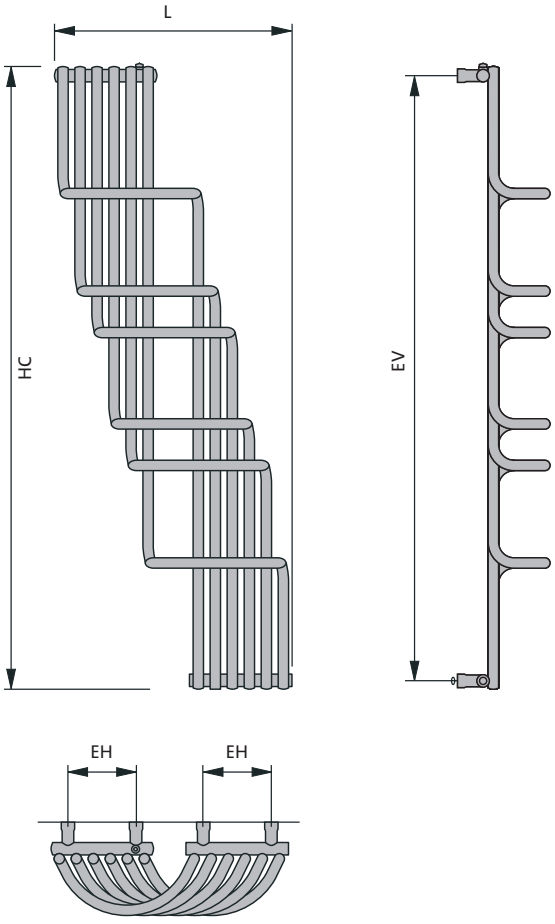
Anafi

STUNNINGLY SCULPTURAL

The Anafi is so stunningly sculptural you may well want one for your living room as well as your bathroom. The daring design sweeps upwards to create a work of art. This sophisticated source of warmth is also available in chrome and gold for those who want the ultimate in luxury. Anafi is a completely electrical model.



Installation measures



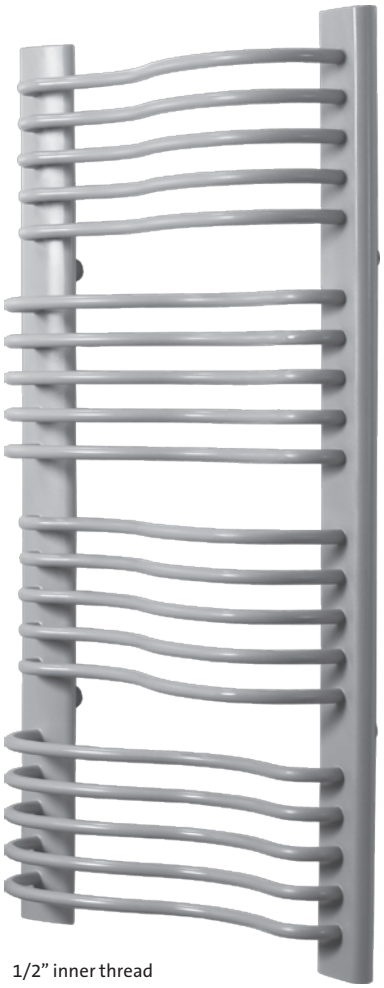
Tecnical data

Type	HEPAC code	Number of horizontal pipes	Electrical element	Width L	Height HC	Installation measures EH	EV
ANA 1205	5530321	6	300 W	572	1250	164	1 210

Aldabra

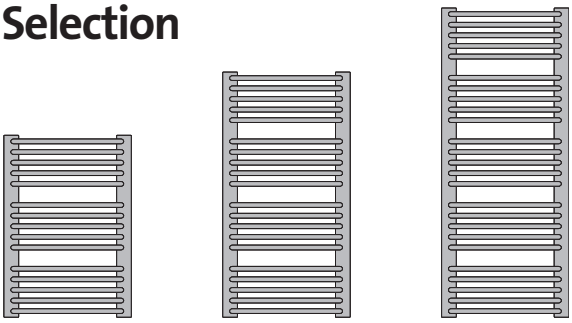
WAVY AND DYNAMIC

The Aldabra towel warmer is designed to appeal to your extravagant side. Its wavy lines create a highly dynamic design, but despite all its splendour it doesn't forget function. The alternating curves make it easy to accommodate lots of towels. The Aldabra is both daring and unusual.
Working pressure 4 bar. Must not be connected to the tap water system.



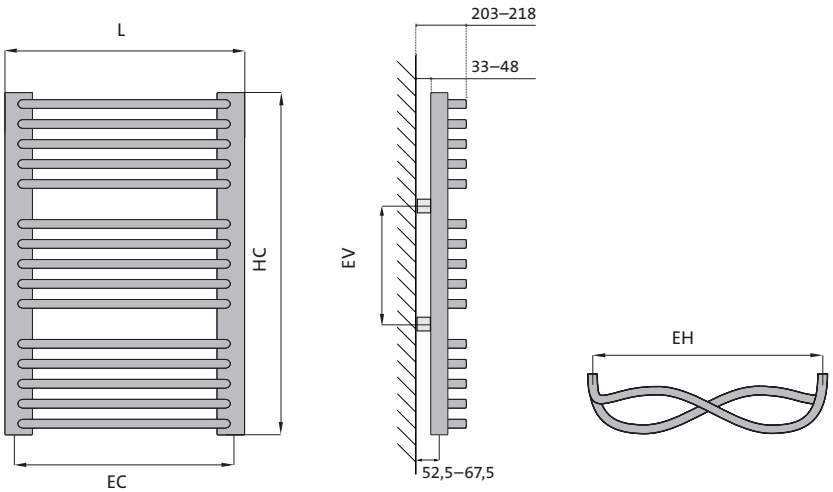
1/2" inner thread

Selection



ALD 1007 ALD 1307 ALD 1607

Installation measures



Technical data

Type	HEPAC code	Number of horizontal pipes	Output W 70/40/20°C	Output W Δt = 50°C	Electrical element W	Length L	Height HC	Installation measures L-100	Installation measures HC-97	Connection m. EC
ALD 1007	5530331	15	378	655	300	700	1 014	590	330	660
ALD 1307	5530332	20	506	877	600	700	1 344	590	660	660
ALD 1607	5530333	25	630	1 092	600	700	1 674	590	990	660

Andros CH & M

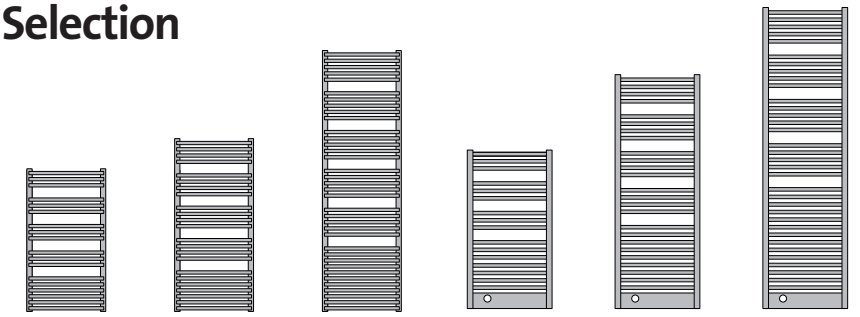
LOW DEPTH. TOP SHINE.

With its elegant lines rising gently out from the wall, the Andros design is a winner in any interior. This chrome version accentuates its own very attractive lines. Andros CH is a chromed model, while Andros M´s standard colour is white RAL 9016.

The connection of the M-model is located in the middle of the towelwarmer, and is hidden behind the front panel. There is a valve in the towelwarmer (M30). Working pressure 4 bar. Must not be connected to the tap water system.

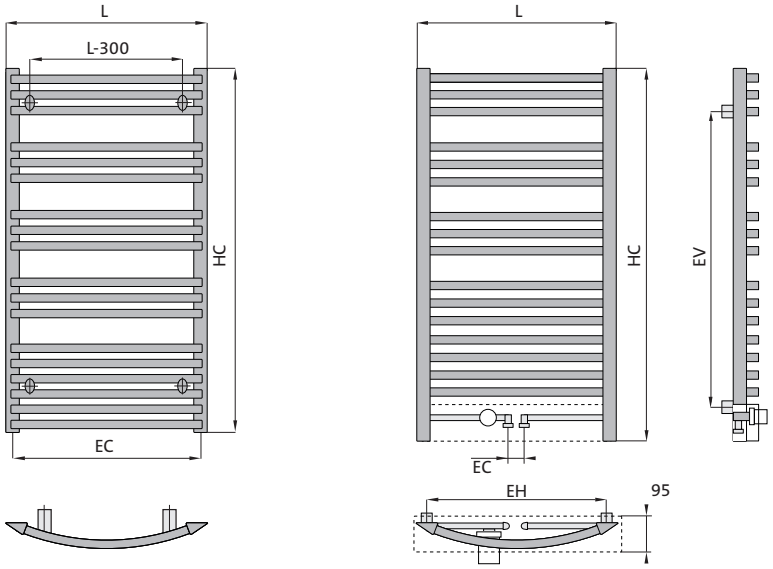
1/2" inner thread

Selection



AND 0806 CH | AND 1206 CH | AND 1706 CH | AND 0806 M | AND 1206 M | AND 1706 M

Installation measures



Technical data

Type	HEPAC code	Number of horizontal pipes	Output W 70/40/20°C	Output W Δt = 50°C	Electrical element W	Width L	Height HC	Installation measures L-300		Connection m. EC
AND 0806 CH	5530351	15	154	267	300	595	776	295		500
AND 1206 CH	5530352	23	231	400	300	595	1 154	295		500
AND 1706 CH	5530353	36	352	610	300	595	1 742	295		500
								EH	EV	
AND 0806 M	5530356	13	266	461	300	595	776	525	546	50
AND 1206 M	5530357	21	397	689	300	595	1 154	525	924	50
AND 1706 M	5530358	34	606	1 051	600	595	1 742	525	1 512	50

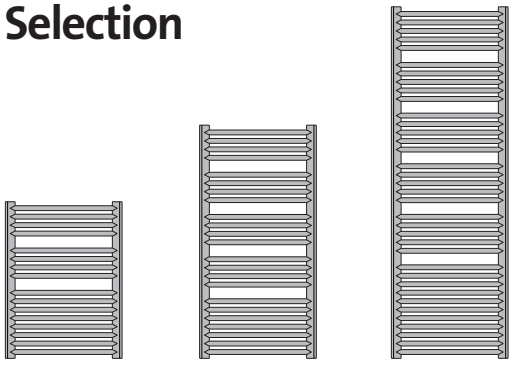
Linosa

EXPRESS YOUR STYLE

The Linosa towel warmers give you a unique chance to express your personal style. Its design stands out in two ways. First, the horizontal pipes are elegantly tapered on the front, giving the whole design an airy feel. Secondly, their elegance is framed by upright columns finished with profiles in brushed steel or wengé.
Working pressure 4 bar. Must not be connected to the tap water system.

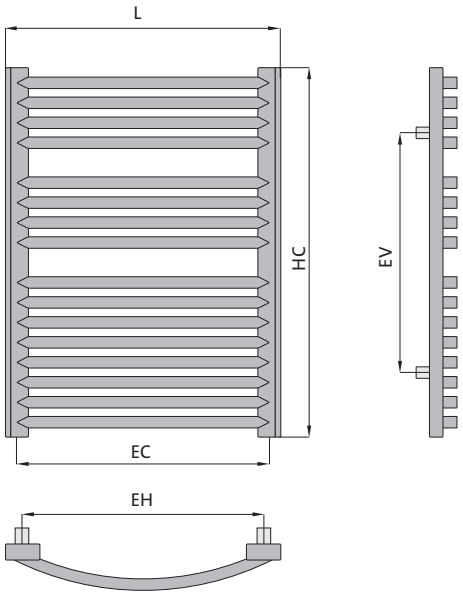
1/2" inner thread

Selection



LIN 0805 LIN 1205 LIN 1705

Installation measures



Technical data

Type	HEPAC code	Number of horizontal pipes	Output W 70/40/20°C	Output W Δt = 50°C	Electrical element W	Width L	Height HC	Installation measures EH	Installation measures EV	Connection m. EC
LIN 0805	5530341	16	197	342	300	504	776	413	504	465
LIN 1205	5530342	23	287	498	300	504	1 154	413	798	465
LIN 1705	5530343	36	444	770	600	504	1 742	413	1 386	465

PURMO

PURMO

Colour map

PURMO radiators are delivererd in white RAL 9016. Also other RAL colours are possible. Here the most common RAL colours. Due to the print technique the colours can differ from the colour of the radiator.

Standard colour

RAL 9016

Special colour

RAL 1013

RAL 1023

RAL 3003

RAL 5002

RAL 5022

RAL 7035

RAL 9001

RAL 9005

RAL 9006 (Silver)

RAL 9007

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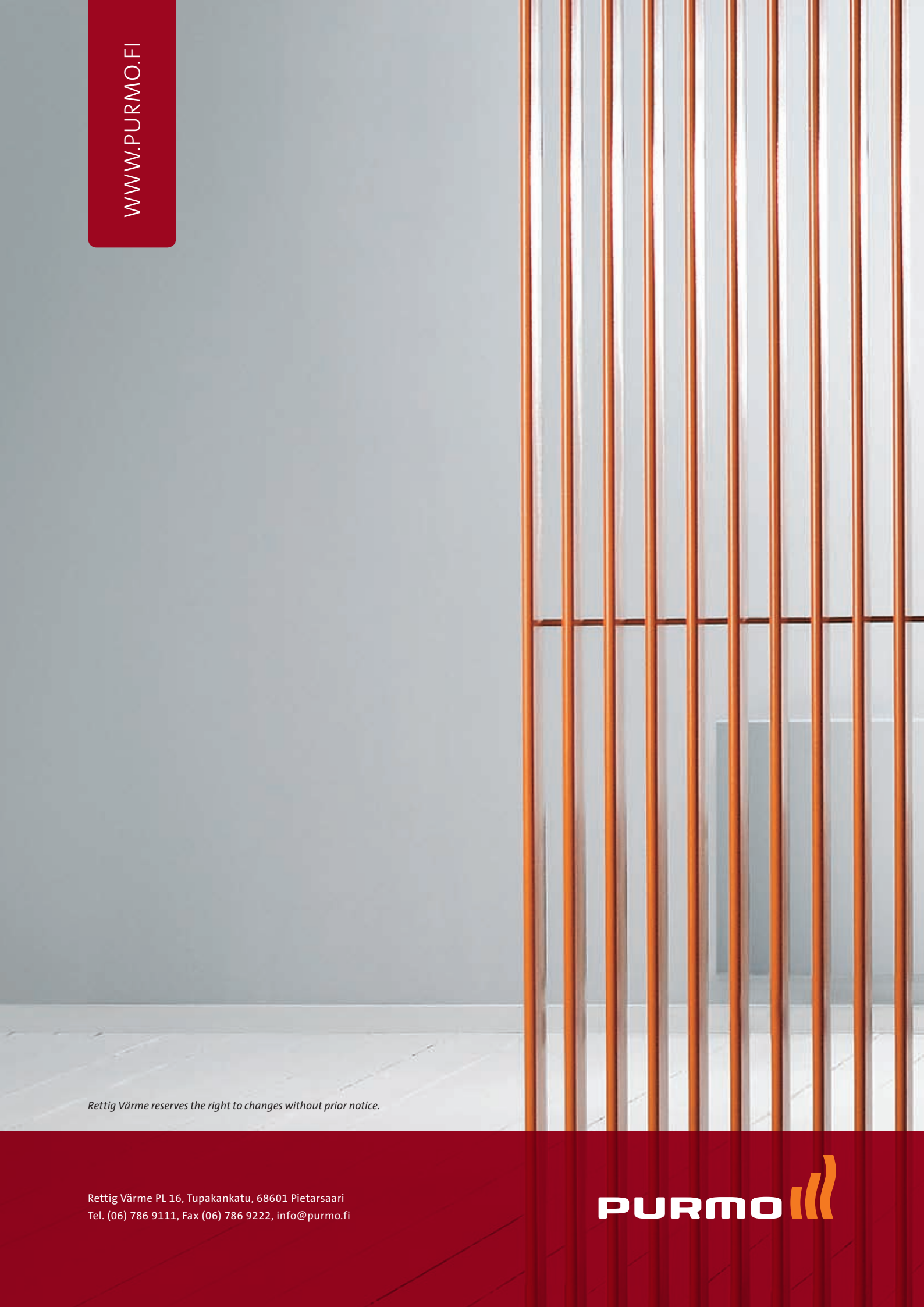

Rettig Värme reserves the right to changes without prior notice.

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PURMO