

PURMO

Radiator TP 11



Radiator TP 22



Radiator TP 21



Convector KON 33



Declaration of Conformity PN-EN 442

TECHNICAL CATALOGUE

PANEL RADIATORS

PURMO 01/2018





PART OF THE **RETTIG**  GROUP

THE POWER OF A WORLD RANKING COMPANY

Rettig ICC markets a variety of top brands, well-known to professionals in the heating business at national, European and international level. Beyond the continent of Europe, we must also mention our growing operations in Asia and America. With annual sales of approximately EUR 640 million, the Rettig ICC Group can justly claim to be Europe's biggest radiator and underfloor heating company.

The values that the company brings to its customers are based on the creation, maintenance and development of win-win commercial relationships. Today, the Rettig ICC Group has the contribution of more than 4100 experienced and enthusiastic employees behind it. Rettig's products consist of steel panels, convectors, design and bathroom radiators and underfloor heating systems.

panel radiators

type overview 4



Compact 10



Ventil Compact 16



Ventil Compact M 22



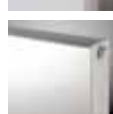
Hygiene 28



Ventil Hygiene 34



Plan Compact 40



Plan Ventil Compact 46



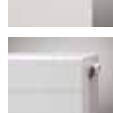
Plan Ventil Compact M 52



Plan Hygiene 58



Plan Ventil Hygiene 64



Ramo Compact 70



Ramo Ventil Compact 76



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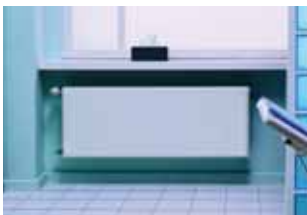

























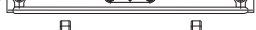

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Type overview

		types
	<p>Compact 4 connections height [mm]: 300, 400, 450, 500, 550, 600, 900 length [mm]: 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2300, 2600, 3000</p>	<p>11 </p> <p>21s </p> <p>22 </p> <p>33 </p>
	<p>Ventil Compact 6 connections height [mm]: 200, 300, 400, 450, 500, 600, 900 length [mm]: 400*, 500*, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2300, 2600, 3000 * except for the Ventil Compact model of height 200 mm; more information about the radiators of height 200 mm is available starting from page 88,</p>	<p>11* </p> <p>21s </p> <p>22 </p> <p>33 </p>
	<p>Ventil Compact M 6 connections height [mm]: 300, 500, 600, 900 length [mm]: 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2300*, 2600*, 3000* * except for the Ventil Compact M model of height 900 mm</p>	<p>11 </p> <p>21s </p> <p>22 </p> <p>33 </p>
	<p>Hygiene 4 connections height [mm]: 300, 400, 450, 500, 550, 600, 900 length [mm]: 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2300, 2600, 3000</p>	<p>10 </p> <p>20 </p> <p>30 </p>
	<p>Ventil Hygiene 6 connections height [mm]: 300, 400, 450, 500, 600, 900 length [mm]: 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2300, 2600, 3000</p>	<p>10 </p> <p>20 </p> <p>30 </p>
	<p>Plan Compact 4 connections height [mm]: 300, 400, 500, 550, 600, 900 length [mm]: 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2300*, 2600*, 3000* * except for the Plan Compact model of height 900 mm</p>	<p>11 </p> <p>21s </p> <p>22 </p> <p>33 </p>
	<p>Plan Ventil Compact 6 connections height [mm]: 200, 300, 400, 500, 600, 900 length [mm]: 400*, 500*, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2300**, 2600**, 3000** * except for the Plan Ventil Compact model of height 200 mm, ** except for the Plan Ventil Compact model of height 900 mm, (more information about the radiators of height 200 mm is available starting from page 88)</p>	<p>11* </p> <p>21s </p> <p>22 </p> <p>33 </p>

Type overview

		types
	<p>Plan Ventil Compact M 6 connections height [mm]: 300, 500, 600, 900 length [mm]: 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2300*, 2600*, 3000*</p> <p>* except for the Plan Ventil Compact M model of height 900 mm</p>	<p>11 </p> <p>21s </p> <p>22 </p> <p>33 </p>
	<p>Plan Hygiene 4 connections height [mm]: 300, 500, 600, 900 length [mm]: 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2300*, 2600*, 3000*</p> <p>* except for the Plan Hygiene model of height 900 mm</p>	<p>10 </p> <p>20 </p> <p>30 </p>
	<p>Plan Ventil Hygiene 6 connections height [mm]: 300, 500, 600, 900 length [mm]: 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2300*, 2600*, 3000*</p> <p>* except for the Plan Ventil Hygiene model of height 900 mm</p>	<p>10 </p> <p>20 </p> <p>30 </p>
	<p>Ramo Compact 4 connections height [mm]: 300, 400, 500, 600, 900 length [mm]: 400, 500, 600, 800, 1000, 1200, 1400, 1600, 1800, 2000, 2300*, 2600*, 3000*</p> <p>* except for the Ramo Compact model of height 900 mm</p>	<p>11 </p> <p>21s </p> <p>22 </p> <p>33 </p>
	<p>Ramo Ventil Compact 6 connections height [mm]: 200, 300, 400, 500, 600, 900 length [mm]: 400*, 500*, 600, 800, 1000, 1200, 1400, 1600, 1800, 2000, 2300**, 2600**, 3000**</p> <p>* except for the Ramo Ventil Compact model of height 200 mm, ** except for the Ramo Ventil Compact model of height 900 mm, (more information about the radiators of height 200 mm is available starting from page 88)</p>	<p>11* </p> <p>21s </p> <p>22 </p> <p>33 </p>
	<p>Ramo Ventil Compact M 6 connections height [mm]: 300, 500, 600, 900 length [mm]: 400, 500, 600, 800, 1000, 1200, 1400, 1600, 1800, 2000, 2300*, 2600*, 3000*</p> <p>* except for the Ramo Ventil Compact M model of height 900 mm</p>	<p>11 </p> <p>21s </p> <p>22 </p> <p>33 </p>
	<p>Vertical 4 connections height [mm]: 1500, 1800, 1950, 2100, 2300 length [mm]: 300, 450, 600, 750</p>	<p>10 </p> <p>20C </p> <p>21C </p> <p>22C </p>

Conditions for application of panel radiators



The PURMO radiators are intended for applications in forced circulation heating systems with black steel, copper or plastic piping with diffusion barrier where water is used as heating medium. They can be used in both single and double-pipe systems. These radiators can also be installed in gravity fed systems, but with restrictions due to their hydraulic resistance.

The PURMO radiators are used for heating of residential, office, commercial and other spaces where the atmosphere is free from adverse influence of corrosive substances and particularly where there is no permanent or periodic moistness of radiator surfaces. These radiators must not be used in spaces where such adverse influence takes place, e.g. in bathrooms, laundry rooms, baths, swimming pool halls, car washes, refrigeration plants and food processing plants. For the same reason the PURMO radiators must not be installed in houses which will not be heated during the first year after their construction or modernization.

The PURMO radiators should be installed in tight, sealed heating systems protected with diaphragm expansion tanks. They may also be installed in small open-vent systems of heating power up to 25 kW, provided approved corrosion inhibitors are used as well.

Systems with the PURMO radiators installed must be filled and replenished with water of appropriate quality. Main water quality indicators may not exceed the following values:

- summarized content of chloride and sulphide ions may not exceed 150 mg/l (in the case of copper piping systems it may not exceed 50 mg/l),
- oxygen content may not exceed 0.1 mg/l,
- pH value should fall within the range of 7.0 ÷ 10.0,
- general hardness may not exceed 4.0 mval/l.

Except for emergency situations, it is unacceptable to drain water from the central heating system. In case of necessity of draining water e.g. due to a repair, only parts of system, where it is necessary, should be drained. The drained parts should be re-filled with water immediately after the completion of repair works. Yearly loss of water in the central heating system should not exceed 5% and 10% of the total water volume, respectively, for closed and open-vent systems.

Using these radiators in systems where the maximal working pressure may exceed 10 bar or the maximal working temperature may exceed 110°C is forbidden. The leakproof test pressure may not exceed 12 bar.

Heating systems with the PURMO radiators installed can be powered with boilers or heat exchange centres. The radiators must not be installed in central heating systems directly connected to a high-temperature heating network e.g. through a hydroelevator or a pump mixing heat distribution centre.

The radiators must be installed with their individual factory packaging even if the central heating system is in operation for building heating during finishing works or for building drying. It is recommended for the packaging to be removed by a user of the space after the completion of all finishing works. The PURMO radiators must be stored indoors only, in closed and dry spaces. It is not allowed to store the radiators outdoors or in moist spaces. The radiators must be transported with due care in dry and closed cargo spaces and handled only in vertical position.

It is not allowed to use cleaning agents containing solvents, acids or other corrosive substances for cleaning the surfaces of the radiator.

production

The PURMO panel radiators are made in accordance with PN-EN 10130 and PN-EN 10131 of the DC01 cold rolled steel delivered in form of coiled strips. Heating panels are produced from sheets of thickness in accordance with PN-EN 442. Forming of heating panels with vertical water channels spaced at 33.3 mm (in the Vertical model – 50 mm) is performed on fully automated, computer controlled production lines where one process line (interconnected with roller conveyors) delivers products ready for painting and packing. The processes of coating and packing are automated as well.

The Plan Compact, Plan Ventil Compact, Plan Ventil Compact M, Plan Hygiene and Plan Ventil Hygiene models of panel radiators are equipped with an additional, decorative front panel glued to the front heating panel. The Plan Ventil Compact D model of height 200 mm also has an additional, decorative panel glued to the rear heating panel.

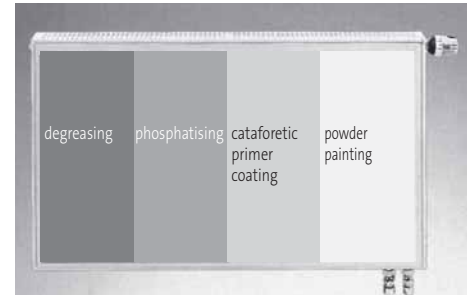
The Ramo Compact, Ramo Ventil Compact, Ramo Ventil Compact M model of panel radiators are equipped with an additional flat front panel, but with subtle horizontal ribbing, also glued to the front heating panel. The Ramo Ventil Compact D model of height 200 mm has similar decorative panel glued to the rear heating panel.

painting

After passing through the first stages of process line, the raw radiators are subjected to further processing providing a surface ready for varnishing. This processing consists of:

- preparing the surface (washing, degreasing, iron phosphatising, flushing) in a pass through a washer with a special chemical showering system,
- priming with the use of the second generation cataforetic KTL II method by complete submerging of the radiators in a white priming paint ensuring an excellent corrosion protection,
- after-priming drying in a dripping chamber and a gas tunnel dryer,
- powder painting with an epoxy paint by electrostatic coating in a painting chamber, with the use of special painting tools,
- polymerization (curing) of the powder paint coat during a pass through a gas furnace in a temperature of ~190°C.

As a standard, all the panel radiators with a profiled or flat front panel are finished in white RAL 9016 colour. Other colours in accordance with the RAL colour chart are available at an additional charge.



Radiator surface preparation



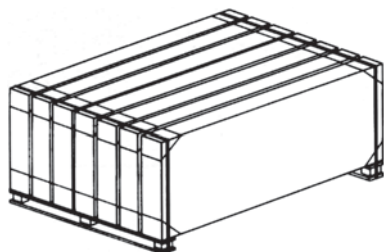
The RAL colour palette radiators

Conditions for application of panel radiators

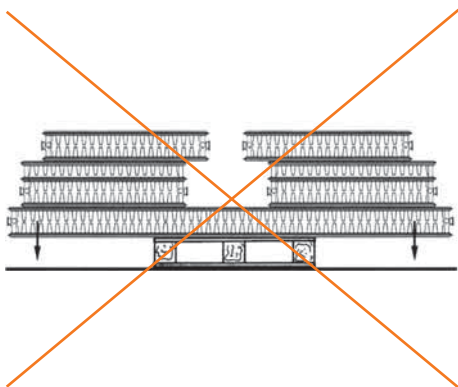


A radiator packaging

Radiator type	Quantity on a pallet
type 10	12 pieces
type 11	12 pieces
type 20	7 pieces
type 21s	10 pieces
type 22	7 pieces
type 30	5 pieces
type 33	5 pieces



Palletizing of radiators



An example of improper, storage possibly leading to a radiator damage

packaging

The panel radiators with profiled and flat front panels are delivered in a protective packaging allowing for installation without unpacking. The radiators are factory wrapped in a heat-shrinkable film. Additional protection of edges is provided by two durable, corrugated board sheets placed longitudinally on the top and bottom of the radiator. Corners are additionally protected with four plastic guards.

During installation, the packaging should be opened in the designated place only. The whole packaging can be removed after the completion of all works that could cause to a damage of the radiator. During heating, the packaging must be completely removed.

Single radiators are vertically placed on wooden pallets and bound with a band in order to prevent uncontrolled movement during storage and transport.

transport and storage

The radiators must be transported with due care in dry and closed cargo spaces and handled only in vertical position.

Both pallets and single radiators in transport must be secured in a manner preventing their movement. Loading and unloading of the radiators should be carried in a manner preventing from damaging their paint coating or deforming the radiator on impact.

The radiators must be stored indoors in closed and dry spaces and protected from moisture or caustic agents that could cause a damage of their paint coating. The radiators must not be stored outdoors, even when they are protected with a film or a canvas cover. If traces of moisture are found inside packaging, they must be immediately removed and the affected radiator must be dried. The radiators must be stored on pallets, and when removed from pallets, they should be stored vertically, with special attention to protection of bottom edges from any damage. The radiators must not be thrown or dragged. Improper transport or storage of the radiators can cause deformation leading to the loss of their tightness. Long radiators, in particular, should not be stored or transported on small pallets in horizontal position. The same pertains to a situation where protruding ends of a longer radiator are loaded by stacks of smaller radiators causing bending and deformation of the bottom radiator.



	Compact	Ventil Compact	Ventil Compact M	Hygiene	Ventil Hygiene	Plan Compact	Plan Ventil Compact	Plan Ventil Compact M	Plan Hygiene	Plan Ventil Hygiene	Ramo Compact	Ramo Ventil Compact	Ramo Ventil Compact M	Vertical
profiled front panel	x	x	x	x	x	-	-	-	-	-	-	-	-	x
flat front panel	-	-	-	-	-	x	x	x	x	x	x	x	x	-
max. working pressure [bar]	10	10	10	10	10	10	10	10	10	10	10	10	10	6
no. of connectors – side + bottom	4	4+2	4+2	4	4+2	4	4+2	4+2	4	4+2	4	4+2	4+2	0+4
side connection – GW ½ "	x	x	x	x	x	x	x	x	x	x	x	x	x	-
bottom connection – GW ½ "	-	x	-	-	x	-	x	-	-	x	-	x	-	x
mid-bottom connection – GW ½ "	-	-	x	-	-	-	-	x	-	-	-	-	x	x
brackets bundled with the radiator	x	x	x	x ¹⁾	x ¹⁾	x	x	x	x ¹⁾	x ¹⁾	x	x	x	x
side covers	x	x	x	-	-	x	x	x	-	-	x	x	x	x
top grille	x	x	x	-	-	x	x	x	-	-	x	x	x	-
built-in thermostatic valve	-	x	x	-	x	-	x	x	-	x	-	x	x	-

Note:

¹⁾ The Hygiene, Ventil Hygiene, Plan Hygiene and Plan Ventil Hygiene radiators are not bundled with mounting brackets. The special Monclac MCK type hospital mountings must be ordered separately. For more information see pages 30, 36, 60, 66.

thermal output of the radiators

Thermal output of the radiators was determined in accordance with PN-EN 442-2 based on laboratory measurements. The temperatures of 75/65/20 °C were accepted as reference values.

Thermal output of the radiators for other values can be calculated with the following formula:

$$\phi = \phi_n \left[\frac{\Delta t}{\Delta t_n} \right]^n$$

where:

ϕ - thermal output of the radiator [W]

ϕ_n - thermal output of the radiator determined based on measurements in accordance with PN-EN 442-2 [W]

Δt - logarithmic difference of temperatures [K]

Δt_n - logarithmic difference of temperatures 49.833 [K] calculated for reference temperatures 75/65/20 °C

n - exponent characteristic for a given type of radiator

The logarithmic difference of temperatures is calculated according to the following formula:

$$\Delta t = \frac{t_z - t_p}{\ln \left(\frac{t_z - t_i}{t_p - t_i} \right)}$$

where:

t_z - supply water temperature [°C]

t_p - return water temperature [°C]

t_i - room temperature [°C]

All the PURMO radiators have a declaration of conformity with PN-EN 442-2. Every radiator is factory marked at the bottom of a panel with the following data: the name of manufacturer, country of origin, type, PN-EN 442-2 conformity register number, maximal working pressure and date and time of production.

These are some examples of conformity register numbers printed inside the individual radiators types:

type 10 = 0810, type 11 = 0811, type 21s = 0812, type 22 = 0813, type 33 = 0814



COMPACT (PURMO C)

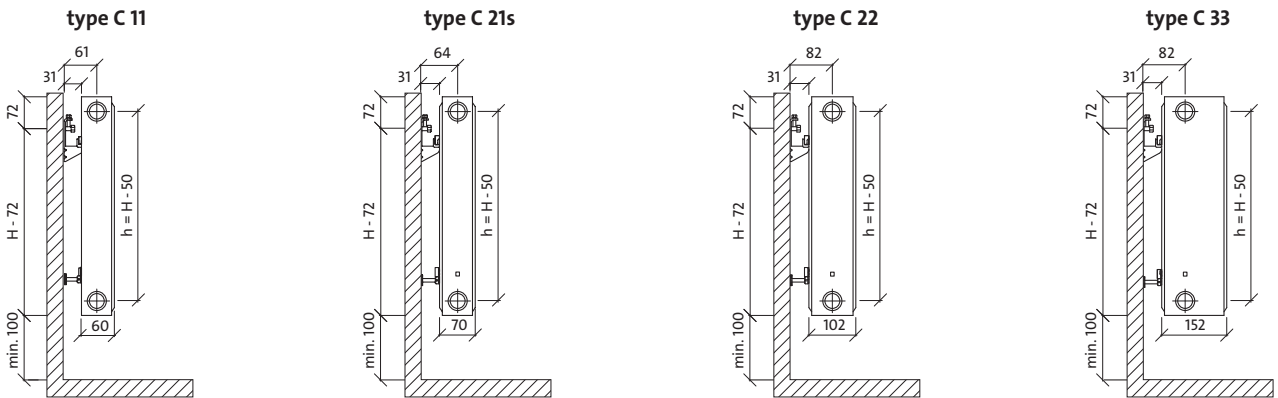
The PURMO Compact panel radiators with profiled heating panels and convection fins are equipped with side covers and a top grille. Four G ½ " threaded female connectors allow for side connection on both right and left side.

technical specifications

- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 4 x G ½ " side connectors
- Working pressure : 10 bar
- Maximal temperature : 110 °C
- Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator: brackets, plug, air vent.



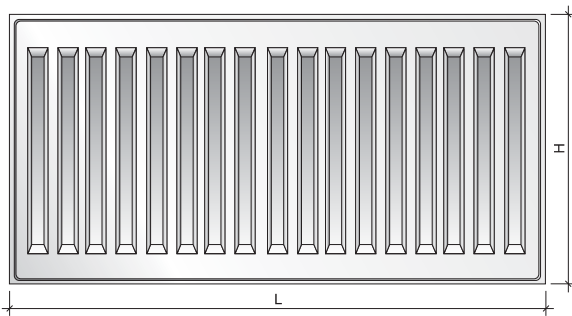
side views



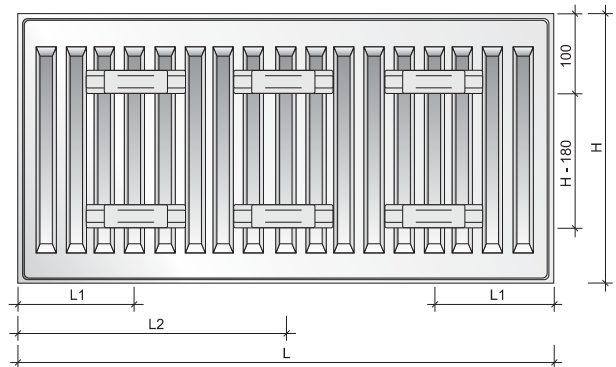
dimensions in mm

H = height
 L = length
 h = spacing of connectors

front view



rear view



water volume, weight and mounting distances

water volume : l/m

height type	300	400	450	500	550	600	900
11	1.7	2.2	2.5	2.7	3.0	3.2	4.5
21s	3.4	4.5	5.0	5.5	6.1	6.6	9.0
22	3.4	4.5	5.0	5.5	6.1	6.6	9.0
33	5.1	6.7	7.5	8.2	9.0	9.8	13.3

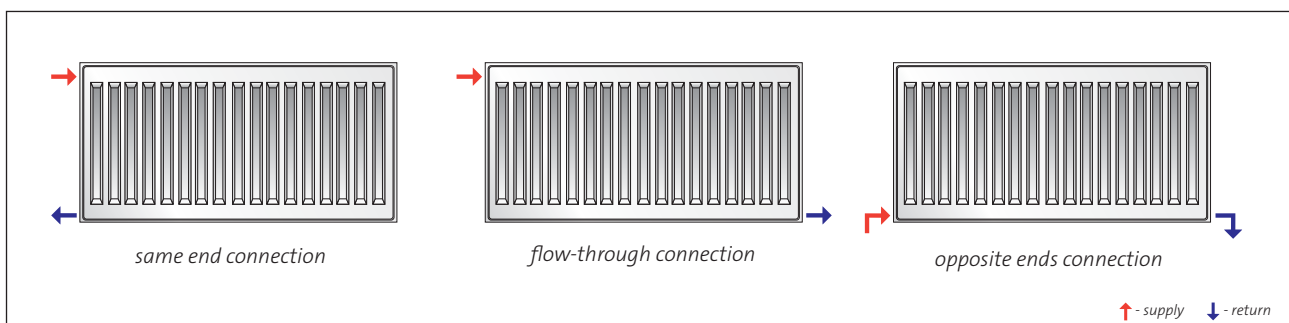
weight : kg/m

height type	300	400	450	500	550	600	900
11	9.1	12.3	13.9	15.5	17.1	18.7	28.3
21s	14.0	18.8	21.2	23.5	25.9	28.3	42.3
22	16.3	22.0	24.9	27.7	30.6	33.4	50.7
33	24.5	33.1	37.4	41.6	45.9	50.2	75.8

mounting distances : mm

type	C 11		C 21s, C 22, C 33		
	L	L1	L2	L1	L2
400-1600	117	-	133	-	-
1800	117	917	133	900	-
2000	117	1017	133	1000	-
2300	117	1150	133	1167	-
2600	117	1317	133	1300	-
3000	117	1517	133	1500	-

recommended connections





RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO C 11 600 x 1200**



length [mm]	parameters $t_z / t_p / t_i$	height [mm]						
		300	400	450	500	550	600	900
400	75/65/20 °C	218	284	316	347	378	407	571
	55/45/20 °C	112	145	161	177	192	207	289
500	75/65/20 °C	273	356	395	434	472	509	714
	55/45/20 °C	140	181	201	221	240	258	361
600	75/65/20 °C	328	427	474	521	566	611	856
	55/45/20 °C	167	218	241	265	288	310	433
700	75/65/20 °C	382	498	553	608	661	713	999
	55/45/20 °C	195	254	282	309	336	362	506
800	75/65/20 °C	437	569	632	694	755	814	1142
	55/45/20 °C	223	290	322	353	384	413	578
900	75/65/20 °C	491	640	711	781	850	916	1284
	55/45/20 °C	251	326	362	398	432	465	650
1000	75/65/20 °C	546	711	790	868	944	1018	1427
	55/45/20 °C	279	363	402	442	480	517	722
1100	75/65/20 °C	601	782	869	955	1038	1120	1570
	55/45/20 °C	307	399	443	486	528	569	795
1200	75/65/20 °C	655	853	948	1042	1133	1222	1712
	55/45/20 °C	335	435	483	530	576	620	867
1400	75/65/20 °C	764	995	1106	1215	1322	1425	1998
	55/45/20 °C	391	508	563	618	672	724	1011
1600	75/65/20 °C	874	1138	1264	1389	1510	1629	2283
	55/45/20 °C	447	580	644	707	768	827	1156
1800	75/65/20 °C	983	1280	1422	1562	1699	1832	2569
	55/45/20 °C	502	653	724	795	864	930	1300
2000	75/65/20 °C	1092	1422	1580	1736	1888	2036	2854
	55/45/20 °C	558	725	805	883	960	1034	1445
2300	75/65/20 °C	1256	1635	1817	1996	2171	2341	3282
	55/45/20 °C	642	834	926	1016	1104	1189	1662
2600	75/65/20 °C	1420	1849	2054	2257	2454	2647	3710
	55/45/20 °C	726	943	1046	1148	1248	1344	1878
3000	75/65/20 °C	1638	2133	2370	2604	2832	3054	4281
	55/45/20 °C	837	1088	1207	1325	1439	1551	2167

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	686	895	994	1093	1189	1283	1800
exponent n	1.2981	1.3030	1.3048	1.3070	1.3093	1.3115	1.3170

type 21s

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO C 21s 600 x 1200**



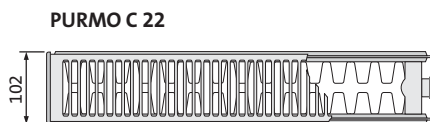
length [mm]	parameters $t_z / t_p / t_i$	height [mm]						
		300	400	450	500	550	600	900
400	75/65/20 °C	304	385	424	462	500	536	744
	55/45/20 °C	157	197	216	235	253	271	373
500	75/65/20 °C	381	482	530	578	625	670	931
	55/45/20 °C	196	247	271	294	317	338	466
600	75/65/20 °C	457	578	636	694	749	804	1117
	55/45/20 °C	236	296	325	353	380	406	559
700	75/65/20 °C	533	674	742	809	874	938	1303
	55/45/20 °C	275	345	379	412	443	474	652
800	75/65/20 °C	609	770	848	925	999	1072	1489
	55/45/20 °C	314	395	433	470	507	542	745
900	75/65/20 °C	685	867	954	1040	1124	1206	1675
	55/45/20 °C	353	444	487	529	570	609	838
1000	75/65/20 °C	761	963	1060	1156	1249	1340	1861
	55/45/20 °C	393	493	541	588	633	677	932
1100	75/65/20 °C	837	1059	1166	1272	1374	1474	2047
	55/45/20 °C	432	543	595	647	696	745	1025
1200	75/65/20 °C	913	1156	1272	1387	1499	1608	2233
	55/45/20 °C	471	592	649	706	760	812	1118
1400	75/65/20 °C	1065	1348	1484	1618	1749	1876	2605
	55/45/20 °C	550	691	758	823	886	948	1304
1600	75/65/20 °C	1218	1541	1696	1850	1998	2144	2978
	55/45/20 °C	628	789	866	941	1013	1083	1490
1800	75/65/20 °C	1370	1733	1908	2081	2248	2412	3350
	55/45/20 °C	707	888	974	1059	1140	1218	1677
2000	75/65/20 °C	1522	1926	2120	2312	2498	2680	3722
	55/45/20 °C	785	987	1082	1176	1266	1354	1863
2300	75/65/20 °C	1750	2215	2438	2659	2873	3082	4280
	55/45/20 °C	903	1135	1245	1353	1456	1557	2142
2600	75/65/20 °C	1979	2504	2756	3006	3247	3484	4839
	55/45/20 °C	1021	1283	1407	1529	1646	1760	2422
3000	75/65/20 °C	2283	2889	3180	3468	3747	4020	5583
	55/45/20 °C	1178	1480	1623	1764	1899	2031	2795

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	954	1210	1333	1456	1575	1691	2356
exponent n	1.2803	1.2940	1.3008	1.3076	1.3145	1.3213	1.3390



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO C 22 600 x 1200**



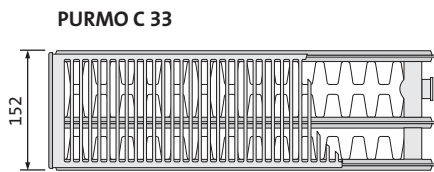
length [mm]	parameters $t_z / t_p / t_i$	height [mm]						
		300	400	450	500	550	600	900
400	75/65/20 °C	384	488	539	588	636	684	955
	55/45/20 °C	195	247	272	296	320	343	474
500	75/65/20 °C	481	611	674	735	796	855	1194
	55/45/20 °C	244	309	340	370	400	428	592
600	75/65/20 °C	577	733	808	882	955	1025	1433
	55/45/20 °C	293	371	408	444	480	514	711
700	75/65/20 °C	673	855	943	1029	1114	1196	1672
	55/45/20 °C	342	432	476	518	560	600	829
800	75/65/20 °C	769	977	1078	1176	1273	1367	1910
	55/45/20 °C	391	494	544	592	640	685	948
900	75/65/20 °C	865	1099	1212	1323	1432	1538	2149
	55/45/20 °C	440	556	612	666	720	771	1066
1000	75/65/20 °C	961	1221	1347	1470	1591	1709	2388
	55/45/20 °C	488	618	680	740	799	857	1185
1100	75/65/20 °C	1057	1343	1482	1617	1750	1880	2627
	55/45/20 °C	537	680	748	814	879	943	1303
1200	75/65/20 °C	1153	1465	1616	1764	1909	2051	2866
	55/45/20 °C	586	741	816	888	959	1028	1422
1400	75/65/20 °C	1345	1709	1886	2058	2227	2393	3343
	55/45/20 °C	684	865	952	1037	1119	1200	1659
1600	75/65/20 °C	1538	1954	2155	2352	2546	2734	3821
	55/45/20 °C	781	988	1088	1185	1279	1371	1896
1800	75/65/20 °C	1730	2198	2425	2646	2864	3076	4298
	55/45/20 °C	879	1112	1224	1333	1439	1542	2133
2000	75/65/20 °C	1922	2442	2694	2940	3182	3418	4776
	55/45/20 °C	977	1236	1360	1481	1599	1714	2370
2300	75/65/20 °C	2210	2808	3098	3381	3659	3931	5492
	55/45/20 °C	1123	1421	1564	1703	1839	1971	2725
2600	75/65/20 °C	2499	3175	3502	3822	4137	4443	6209
	55/45/20 °C	1270	1606	1768	1925	2079	2228	3080
3000	75/65/20 °C	2883	3663	4041	4410	4773	5127	7164
	55/45/20 °C	1465	1853	2040	2221	2398	2571	3554

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1211	1540	1701	1857	2012	2163	3033
exponent n	1.3094	1.3180	1.3226	1.3270	1.3314	1.3358	1.3561

type 33

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO C 33 600 x 1200**



name
type
height
length



length [mm]	parameters $t_z / t_p / t_i$	height [mm]						
		300	400	450	500	550	600	900
400	75/65/20 °C	539	680	748	814	879	942	1304
	55/45/20 °C	273	343	376	408	439	469	646
500	75/65/20 °C	674	850	935	1018	1099	1178	1630
	55/45/20 °C	341	428	470	510	549	587	807
600	75/65/20 °C	808	1019	1121	1221	1318	1414	1956
	55/45/20 °C	410	514	564	612	659	704	968
700	75/65/20 °C	943	1189	1308	1425	1538	1649	2282
	55/45/20 °C	478	599	657	714	768	821	1130
800	75/65/20 °C	1078	1359	1495	1628	1758	1885	2608
	55/45/20 °C	546	685	751	816	878	939	1291
900	75/65/20 °C	1212	1529	1682	1832	1977	2120	2934
	55/45/20 °C	615	771	845	918	988	1056	1453
1000	75/65/20 °C	1347	1699	1869	2035	2197	2356	3260
	55/45/20 °C	683	856	939	1020	1098	1173	1614
1100	75/65/20 °C	1482	1869	2056	2239	2417	2592	3586
	55/45/20 °C	751	942	1033	1122	1207	1291	1776
1200	75/65/20 °C	1616	2039	2243	2442	2636	2827	3912
	55/45/20 °C	820	1028	1127	1224	1317	1408	1937
1400	75/65/20 °C	1886	2379	2617	2849	3076	3298	4564
	55/45/20 °C	956	1199	1315	1427	1537	1643	2260
1600	75/65/20 °C	2155	2718	2990	3256	3515	3770	5216
	55/45/20 °C	1093	1370	1503	1631	1756	1877	2583
1800	75/65/20 °C	2425	3058	3364	3663	3955	4241	5868
	55/45/20 °C	1229	1541	1691	1835	1976	2112	2905
2000	75/65/20 °C	2694	3398	3738	4070	4394	4712	6520
	55/45/20 °C	1366	1713	1878	2039	2195	2347	3228
2300	75/65/20 °C	3098	3908	4299	4681	5053	5419	7498
	55/45/20 °C	1571	1970	2160	2345	2524	2699	3713
2600	75/65/20 °C	3502	4417	4859	5291	5712	6126	8476
	55/45/20 °C	1776	2227	2442	2651	2854	3051	4197
3000	75/65/20 °C	4041	5097	5607	6105	6591	7068	9780
	55/45/20 °C	2049	2569	2818	3059	3293	3520	4842

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1698	2146	2363	2576	2784	2988	4143
exponent n	1.3140	1.3260	1.3313	1.3371	1.3428	1.3486	1.3600



VENTIL COMPACT (PURMO CV)

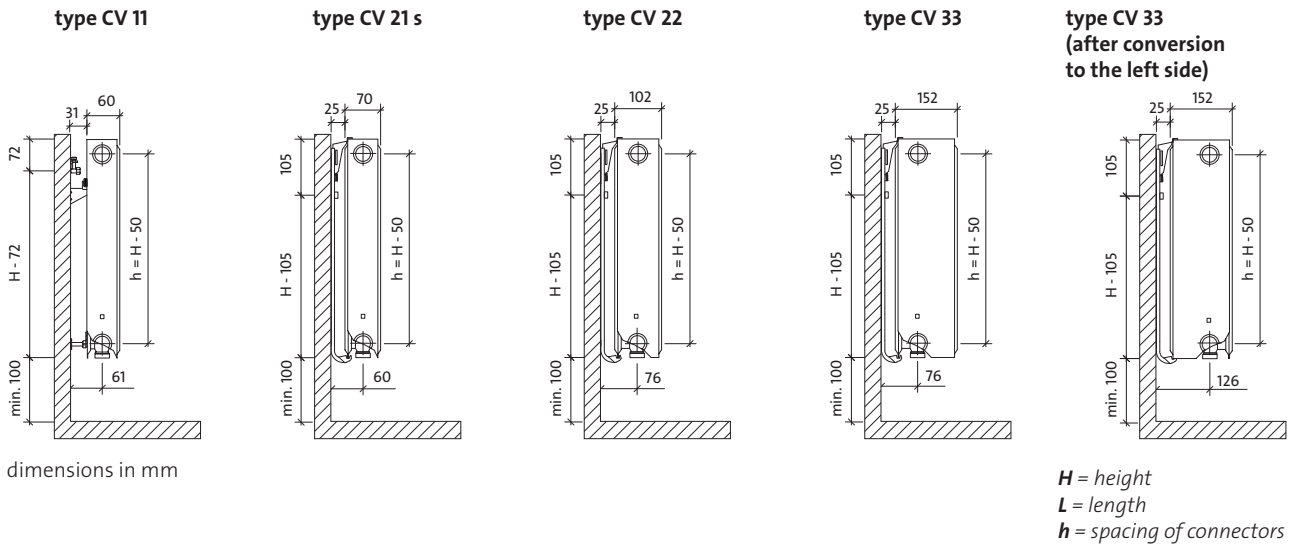
The versatile PURMO Ventil Compact panel radiators with profiled heating panels and convection fins are equipped with side covers and a top grille. Two bottom and four side G ½ " threaded female connectors allow for bottom or side connection. The radiator is also equipped with a built-in thermostatic Oventrop valve insert providing pre-setting.

technical specifications

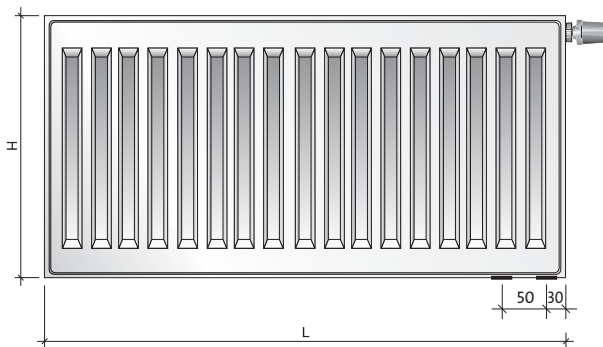
- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 2 x G ½ " bottom, right side connectors (left side - available on request)
4 x G ½ " side connectors
- Working pressure : 10 bar
- Maximal temperature : 110 °C
- Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator: brackets, plug, air vent.



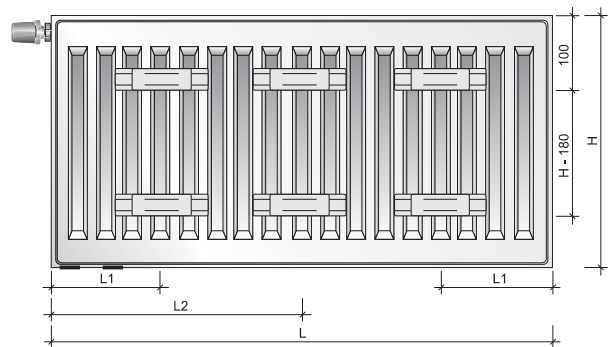
side views



front view



rear view - CV 11 type only



water volume, weight and mounting distances

water volume : l/m

height type	300	400	450	500	600	900
11	1.7	2.2	2.5	2.7	3.2	4.5
21s	3.4	4.5	5.0	5.5	6.6	9.0
22	3.4	4.5	5.0	5.5	6.6	9.0
33	5.1	6.7	7.5	8.2	9.8	13.3

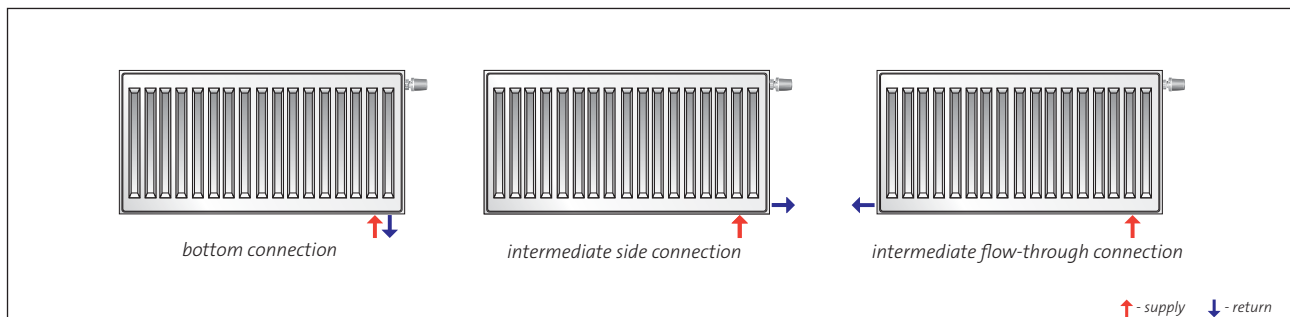
weight : kg/m

height type	300	400	450	500	600	900
11	9.1	12.3	13.9	15.5	18.7	28.3
21s	14.0	18.8	21.2	23.5	28.3	42.3
22	16.3	22.0	24.9	27.7	33.4	50.7
33	24.5	33.1	37.4	41.6	50.2	75.8

mounting distances : mm

type	CV 11	
	L	L2
400-1600	117	-
1800	117	917
2000	117	1017
2300	117	1150
2600	117	1317
3000	117	1517

recommended connections

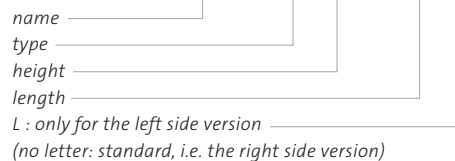




PURMO CV 11



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO CV 11 600 x 1200 L**



length [mm]	parameters $t_z / t_p / t_i$	height [mm]					
		300	400	450	500	600	900
400	75/65/20 °C	218	284	316	347	407	571
	55/45/20 °C	112	145	161	177	207	289
500	75/65/20 °C	273	356	395	434	509	714
	55/45/20 °C	140	181	201	221	258	361
600	75/65/20 °C	328	427	474	521	611	856
	55/45/20 °C	167	218	241	265	310	433
700	75/65/20 °C	382	498	553	608	713	999
	55/45/20 °C	195	254	282	309	362	506
800	75/65/20 °C	437	569	632	694	814	1142
	55/45/20 °C	223	290	322	353	413	578
900	75/65/20 °C	491	640	711	781	916	1284
	55/45/20 °C	251	326	362	398	465	650
1000	75/65/20 °C	546	711	790	868	1018	1427
	55/45/20 °C	279	363	402	442	517	722
1100	75/65/20 °C	601	782	869	955	1120	1570
	55/45/20 °C	307	399	443	486	569	795
1200	75/65/20 °C	655	853	948	1042	1222	1712
	55/45/20 °C	335	435	483	530	620	867
1400	75/65/20 °C	764	995	1106	1215	1425	1998
	55/45/20 °C	391	508	563	618	724	1011
1600	75/65/20 °C	874	1138	1264	1389	1629	2283
	55/45/20 °C	447	580	644	707	827	1156
1800	75/65/20 °C	983	1280	1422	1562	1832	2569
	55/45/20 °C	502	653	724	795	930	1300
2000	75/65/20 °C	1092	1422	1580	1736	2036	2854
	55/45/20 °C	558	725	805	883	1034	1445
2300	75/65/20 °C	1256	1635	1817	1996	2341	3282
	55/45/20 °C	642	834	926	1016	1189	1662
2600	75/65/20 °C	1420	1849	2054	2257	2647	3710
	55/45/20 °C	726	943	1046	1148	1344	1878
3000	75/65/20 °C	1638	2133	2370	2604	3054	4281
	55/45/20 °C	837	1088	1207	1325	1551	2167

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	686	895	994	1093	1283	1800
exponent n	1.2981	1.3030	1.3048	1.3070	1.3115	1.3170

type 21s

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO CV 21s 600 x 1200**



length [mm]	parameters $t_z / t_p / t_i$	height [mm]					
		300	400	450	500	600	900
400	75/65/20 °C	304	385	424	462	536	744
	55/45/20 °C	157	197	216	235	271	373
500	75/65/20 °C	381	482	530	578	670	931
	55/45/20 °C	196	247	271	294	338	466
600	75/65/20 °C	457	578	636	694	804	1117
	55/45/20 °C	236	296	325	353	406	559
700	75/65/20 °C	533	674	742	809	938	1303
	55/45/20 °C	275	345	379	412	474	652
800	75/65/20 °C	609	770	848	925	1072	1489
	55/45/20 °C	314	395	433	470	542	745
900	75/65/20 °C	685	867	954	1040	1206	1675
	55/45/20 °C	353	444	487	529	609	838
1000	75/65/20 °C	761	963	1060	1156	1340	1861
	55/45/20 °C	393	493	541	588	677	932
1100	75/65/20 °C	837	1059	1166	1272	1474	2047
	55/45/20 °C	432	543	595	647	745	1025
1200	75/65/20 °C	913	1156	1272	1387	1608	2233
	55/45/20 °C	471	592	649	706	812	1118
1400	75/65/20 °C	1065	1348	1484	1618	1876	2605
	55/45/20 °C	550	691	758	823	948	1304
1600	75/65/20 °C	1218	1541	1696	1850	2144	2978
	55/45/20 °C	628	789	866	941	1083	1490
1800	75/65/20 °C	1370	1733	1908	2081	2412	3350
	55/45/20 °C	707	888	974	1059	1218	1677
2000	75/65/20 °C	1522	1926	2120	2312	2680	3722
	55/45/20 °C	785	987	1082	1176	1354	1863
2300	75/65/20 °C	1750	2215	2438	2659	3082	4280
	55/45/20 °C	903	1135	1245	1353	1557	2142
2600	75/65/20 °C	1979	2504	2756	3006	3484	4839
	55/45/20 °C	1021	1283	1407	1529	1760	2422
3000	75/65/20 °C	2283	2889	3180	3468	4020	5583
	55/45/20 °C	1178	1480	1623	1764	2031	2795

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	954	1210	1333	1456	1691	2356
exponent n	1.2803	1.2940	1.3008	1.3076	1.3213	1.3390



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO CV 22 600 x 1200**



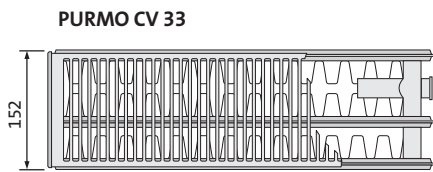
length [mm]	parameters $t_z / t_p / t_i$	height					
		300	400	450	500	600	900
400	75/65/20 °C	384	488	539	588	684	955
	55/45/20 °C	195	247	272	296	343	474
500	75/65/20 °C	481	611	674	735	855	1194
	55/45/20 °C	244	309	340	370	428	592
600	75/65/20 °C	577	733	808	882	1025	1433
	55/45/20 °C	293	371	408	444	514	711
700	75/65/20 °C	673	855	943	1029	1196	1672
	55/45/20 °C	342	432	476	518	600	829
800	75/65/20 °C	769	977	1078	1176	1367	1910
	55/45/20 °C	391	494	544	592	685	948
900	75/65/20 °C	865	1099	1212	1323	1538	2149
	55/45/20 °C	440	556	612	666	771	1066
1000	75/65/20 °C	961	1221	1347	1470	1709	2388
	55/45/20 °C	488	618	680	740	857	1185
1100	75/65/20 °C	1057	1343	1482	1617	1880	2627
	55/45/20 °C	537	680	748	814	943	1303
1200	75/65/20 °C	1153	1465	1616	1764	2051	2866
	55/45/20 °C	586	741	816	888	1028	1422
1400	75/65/20 °C	1345	1709	1886	2058	2393	3343
	55/45/20 °C	684	865	952	1037	1200	1659
1600	75/65/20 °C	1538	1954	2155	2352	2734	3821
	55/45/20 °C	781	988	1088	1185	1371	1896
1800	75/65/20 °C	1730	2198	2425	2646	3076	4298
	55/45/20 °C	879	1112	1224	1333	1542	2133
2000	75/65/20 °C	1922	2442	2694	2940	3418	4776
	55/45/20 °C	977	1236	1360	1481	1714	2370
2300	75/65/20 °C	2210	2808	3098	3381	3931	5492
	55/45/20 °C	1123	1421	1564	1703	1971	2725
2600	75/65/20 °C	2499	3175	3502	3822	4443	6209
	55/45/20 °C	1270	1606	1768	1925	2228	3080
3000	75/65/20 °C	2883	3663	4041	4410	5127	7164
	55/45/20 °C	1465	1853	2040	2221	2571	3554

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1211	1540	1701	1857	2163	3033
exponent n	1.3094	1.3180	1.3226	1.3270	1.3358	1.3561

type 33

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO CV 33 600 x 1200 L**



name _____
 type _____
 height _____
 length _____
 L : only for the left side version
 (no letter: standard, i.e. the right side version)



length [mm]	parameters t _z / t _p / t _i	height [mm]					
		300	400	450	500	600	900
400	75/65/20 °C	539	680	748	814	942	1304
	55/45/20 °C	273	343	376	408	469	646
500	75/65/20 °C	674	850	935	1018	1178	1630
	55/45/20 °C	341	428	470	510	587	807
600	75/65/20 °C	808	1019	1121	1221	1414	1956
	55/45/20 °C	410	514	564	612	704	968
700	75/65/20 °C	943	1189	1308	1425	1649	2282
	55/45/20 °C	478	599	657	714	821	1130
800	75/65/20 °C	1078	1359	1495	1628	1885	2608
	55/45/20 °C	546	685	751	816	939	1291
900	75/65/20 °C	1212	1529	1682	1832	2120	2934
	55/45/20 °C	615	771	845	918	1056	1453
1000	75/65/20 °C	1347	1699	1869	2035	2356	3260
	55/45/20 °C	683	856	939	1020	1173	1614
1100	75/65/20 °C	1482	1869	2056	2239	2592	3586
	55/45/20 °C	751	942	1033	1122	1291	1776
1200	75/65/20 °C	1616	2039	2243	2442	2827	3912
	55/45/20 °C	820	1028	1127	1224	1408	1937
1400	75/65/20 °C	1886	2379	2617	2849	3298	4564
	55/45/20 °C	956	1199	1315	1427	1643	2260
1600	75/65/20 °C	2155	2718	2990	3256	3770	5216
	55/45/20 °C	1093	1370	1503	1631	1877	2583
1800	75/65/20 °C	2425	3058	3364	3663	4241	5868
	55/45/20 °C	1229	1541	1691	1835	2112	2905
2000	75/65/20 °C	2694	3398	3738	4070	4712	6520
	55/45/20 °C	1366	1713	1878	2039	2347	3228
2300	75/65/20 °C	3098	3908	4299	4681	5419	7498
	55/45/20 °C	1571	1970	2160	2345	2699	3713
2600	75/65/20 °C	3502	4417	4859	5291	6126	8476
	55/45/20 °C	1776	2227	2442	2651	3051	4197
3000	75/65/20 °C	4041	5097	5607	6105	7068	9780
	55/45/20 °C	2049	2569	2818	3059	3520	4842

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1698	2146	2363	2576	2988	4143
exponent n	1.3140	1.3260	1.3313	1.3371	1.3486	1.3600



VENTIL COMPACT M (PURMO CVM)

The PURMO Ventil Compact M panel radiators with mid-bottom connectors, profiled heating panels and convection fins are equipped with side covers and a top grille. Two mid-bottom and four side G ½ " threaded female connectors allow for central bottom or side connection. The radiator is also equipped with a built-in thermostatic Oventrop valve insert providing pre-setting.

The main advantage of the central bottom connection relies on the fact that regardless of the length, height and depth of the radiator, the layout of heating system connections can be defined at the building shell stage and it will not change as a result of the selection of a specific size and type of the radiator.

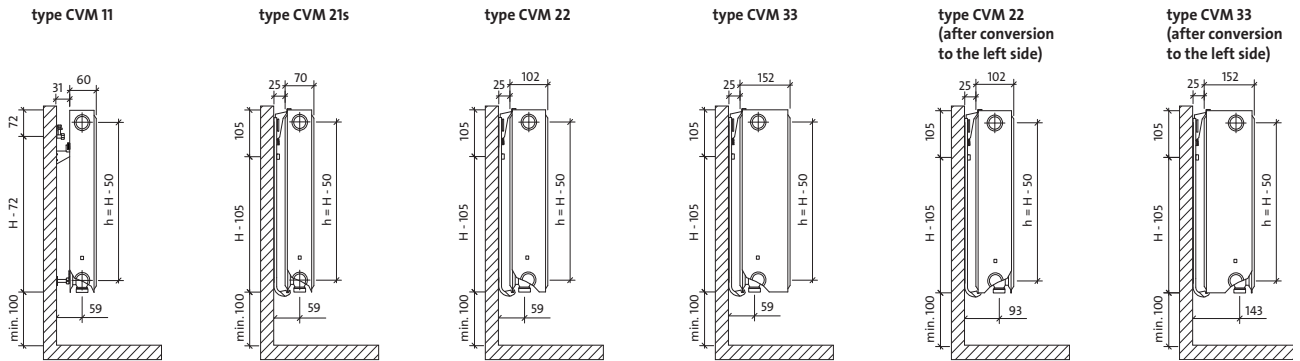
technical specifications

- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 2 x G ½ " mid-bottom connectors,
4 x G ½ " side connectors
- Working pressure : 10 bar
- Maximal temperature : 110 °C
- Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator : brackets, plugs, air vent.



NOTE: the CVM radiator is available in the right side version only.

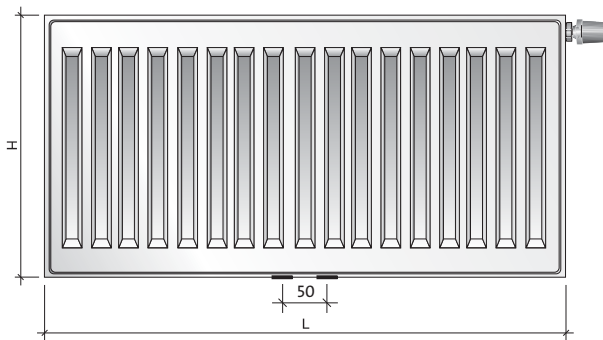
side views



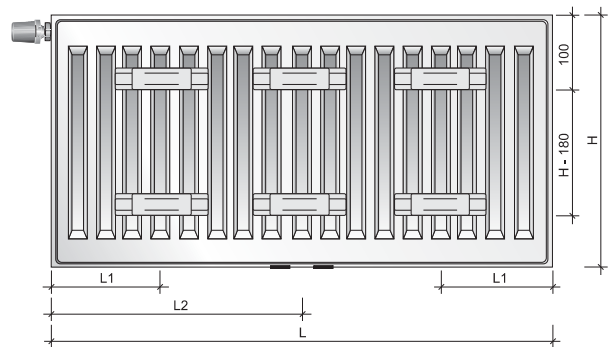
dimensions in mm

H = height
L = length
h = spacing of connectors

front view



rear view – CVM 11 type only



water volume, weight and mounting distances

water volume : l/m

height type	300	500	600	900
11	1.7	2.7	3.2	4.5
21s	3.4	5.5	6.6	9.0
22	3.4	5.5	6.6	9.0
33	5.1	8.2	9.8	13.3

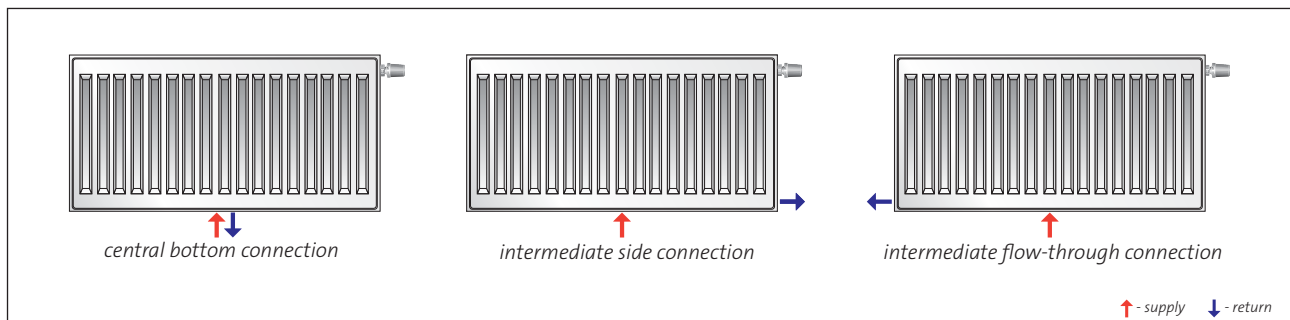
weight : kg/m

height type	300	500	600	900
11	9.1	15.5	18.7	28.3
21s	14.0	23.5	28.3	42.3
22	16.3	27.7	33.4	50.7
33	24.5	41.6	50.2	75.8

mounting distances : mm

type	CVM 11	
	L1	L2
400-1600	117	-
1800	117	917
2000	117	1017
2300	117	1150
2600	117	1317
3000	117	1517

recommended connections





RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO CVM 11 600 x 1200**



name _____
type _____
height _____
length _____

NOTE: the CVM radiator is available in the right side version only.

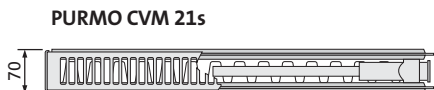
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	218	347	407	571
	55/45/20 °C	112	177	207	289
500	75/65/20 °C	273	434	509	714
	55/45/20 °C	140	221	258	361
600	75/65/20 °C	328	521	611	856
	55/45/20 °C	167	265	310	433
700	75/65/20 °C	382	608	713	999
	55/45/20 °C	195	309	362	506
800	75/65/20 °C	437	694	814	1142
	55/45/20 °C	223	353	413	578
900	75/65/20 °C	491	781	916	1284
	55/45/20 °C	251	398	465	650
1000	75/65/20 °C	546	868	1018	1427
	55/45/20 °C	279	442	517	722
1100	75/65/20 °C	601	955	1120	1570
	55/45/20 °C	307	486	569	795
1200	75/65/20 °C	655	1042	1222	1712
	55/45/20 °C	335	530	620	867
1400	75/65/20 °C	764	1215	1425	1998
	55/45/20 °C	391	618	724	1011
1600	75/65/20 °C	874	1389	1629	2283
	55/45/20 °C	447	707	827	1156
1800	75/65/20 °C	983	1562	1832	2569
	55/45/20 °C	502	795	930	1300
2000	75/65/20 °C	1092	1736	2036	2854
	55/45/20 °C	558	883	1034	1445
2300	75/65/20 °C	1256	1996	2341	
	55/45/20 °C	642	1016	1189	
2600	75/65/20 °C	1420	2257	2647	
	55/45/20 °C	726	1148	1344	
3000	75/65/20 °C	1638	2604	3054	
	55/45/20 °C	837	1325	1551	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	686	1093	1283	1800
exponent n	1.2981	1.3070	1.3115	1.3170

type 21s

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO CVM 21s 600 x 1200**

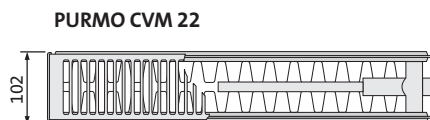


NOTE: the CVM radiator is available in the right side version only.

length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	304	462	536	744
	55/45/20 °C	157	235	271	373
500	75/65/20 °C	381	578	670	931
	55/45/20 °C	196	294	338	466
600	75/65/20 °C	457	694	804	1117
	55/45/20 °C	236	353	406	559
700	75/65/20 °C	533	809	938	1303
	55/45/20 °C	275	412	474	652
800	75/65/20 °C	609	925	1072	1489
	55/45/20 °C	314	470	542	745
900	75/65/20 °C	685	1040	1206	1675
	55/45/20 °C	353	529	609	838
1000	75/65/20 °C	761	1156	1340	1861
	55/45/20 °C	393	588	677	932
1100	75/65/20 °C	837	1272	1474	2047
	55/45/20 °C	432	647	745	1025
1200	75/65/20 °C	913	1387	1608	2233
	55/45/20 °C	471	706	812	1118
1400	75/65/20 °C	1065	1618	1876	2605
	55/45/20 °C	550	823	948	1304
1600	75/65/20 °C	1218	1850	2144	2978
	55/45/20 °C	628	941	1083	1490
1800	75/65/20 °C	1370	2081	2412	3350
	55/45/20 °C	707	1059	1218	1677
2000	75/65/20 °C	1522	2312	2680	3722
	55/45/20 °C	785	1176	1354	1863
2300	75/65/20 °C	1750	2659	3082	
	55/45/20 °C	903	1353	1557	
2600	75/65/20 °C	1979	3006	3484	
	55/45/20 °C	1021	1529	1760	
3000	75/65/20 °C	2283	3468	4020	
	55/45/20 °C	1178	1764	2031	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C exponent n	954 1.2803	1456 1.3076	1691 1.3213	2356 1.3390
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RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO CVM 22 600 x 1200**

name _____
type _____
height _____
length _____

NOTE: the CVM radiator is available in the right side version only.

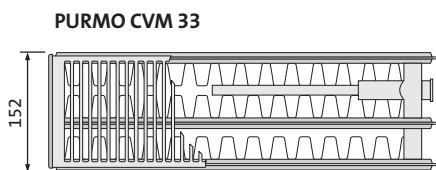
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	384	588	684	955
	55/45/20 °C	195	296	343	474
500	75/65/20 °C	481	735	855	1194
	55/45/20 °C	244	370	428	592
600	75/65/20 °C	577	882	1025	1433
	55/45/20 °C	293	444	514	711
700	75/65/20 °C	673	1029	1196	1672
	55/45/20 °C	342	518	600	829
800	75/65/20 °C	769	1176	1367	1910
	55/45/20 °C	391	592	685	948
900	75/65/20 °C	865	1323	1538	2149
	55/45/20 °C	440	666	771	1066
1000	75/65/20 °C	961	1470	1709	2388
	55/45/20 °C	488	740	857	1185
1100	75/65/20 °C	1057	1617	1880	2627
	55/45/20 °C	537	814	943	1303
1200	75/65/20 °C	1153	1764	2051	2866
	55/45/20 °C	586	888	1028	1422
1400	75/65/20 °C	1345	2058	2393	3343
	55/45/20 °C	684	1037	1200	1659
1600	75/65/20 °C	1538	2352	2734	3821
	55/45/20 °C	781	1185	1371	1896
1800	75/65/20 °C	1730	2646	3076	4298
	55/45/20 °C	879	1333	1542	2133
2000	75/65/20 °C	1922	2940	3418	4776
	55/45/20 °C	977	1481	1714	2370
2300	75/65/20 °C	2210	3381	3931	
	55/45/20 °C	1123	1703	1971	
2600	75/65/20 °C	2499	3822	4443	
	55/45/20 °C	1270	1925	2228	
3000	75/65/20 °C	2883	4410	5127	
	55/45/20 °C	1465	2221	2571	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1211	1857	2163	3033
exponent n	1.3094	1.3270	1.3358	1.3561

type 33

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO CVM 33 600 x 1200**



name _____
type _____
height _____
length _____



NOTE: the CVM radiator is available in the right side version only.

length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	539	814	942	1304
	55/45/20 °C	273	408	469	646
500	75/65/20 °C	674	1018	1178	1630
	55/45/20 °C	341	510	587	807
600	75/65/20 °C	808	1221	1414	1956
	55/45/20 °C	410	612	704	968
700	75/65/20 °C	943	1425	1649	2282
	55/45/20 °C	478	714	821	1130
800	75/65/20 °C	1078	1628	1885	2608
	55/45/20 °C	546	816	939	1291
900	75/65/20 °C	1212	1832	2120	2934
	55/45/20 °C	615	918	1056	1453
1000	75/65/20 °C	1347	2035	2356	3260
	55/45/20 °C	683	1020	1173	1614
1100	75/65/20 °C	1482	2239	2592	3586
	55/45/20 °C	751	1122	1291	1776
1200	75/65/20 °C	1616	2442	2827	3912
	55/45/20 °C	820	1224	1408	1937
1400	75/65/20 °C	1886	2849	3298	4564
	55/45/20 °C	956	1427	1643	2260
1600	75/65/20 °C	2155	3256	3770	5216
	55/45/20 °C	1093	1631	1877	2583
1800	75/65/20 °C	2425	3663	4241	5868
	55/45/20 °C	1229	1835	2112	2905
2000	75/65/20 °C	2694	4070	4712	6520
	55/45/20 °C	1366	2039	2347	3228
2300	75/65/20 °C	3098	4681	5419	
	55/45/20 °C	1571	2345	2699	
2600	75/65/20 °C	3502	5291	6126	
	55/45/20 °C	1776	2651	3051	
3000	75/65/20 °C	4041	6105	7068	
	55/45/20 °C	2049	3059	3520	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1698	2576	2988	4143
exponent n	1.3140	1.3371	1.3486	1.3600



HYGIENE (PURMO H)

The PURMO Hygiene panel radiators with profiled heating panels are not equipped with convection fins. Due to the absence of side covers and a top grille, they are intended for applications in health care and other facilities of elevated hygienic requirements. Four side G ½ " threaded female connectors allow for side connection on both right and left side.

technical specifications

- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 4 x G ½ " side connectors
- Working pressure : 10 bar
- Maximal temperature : 110 °C
- Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator: plug, air vent.

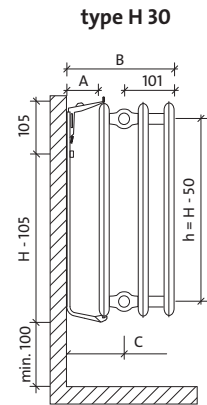
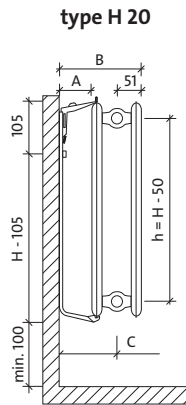
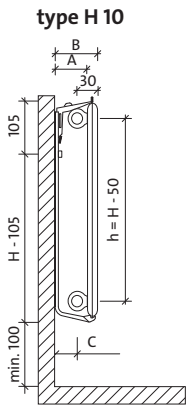
NOTE:

Mounting brackets must be ordered separately. For the method of selecting and ordering see page 30



The Hygiene radiators are also available in a special version with additional corrosion protection.

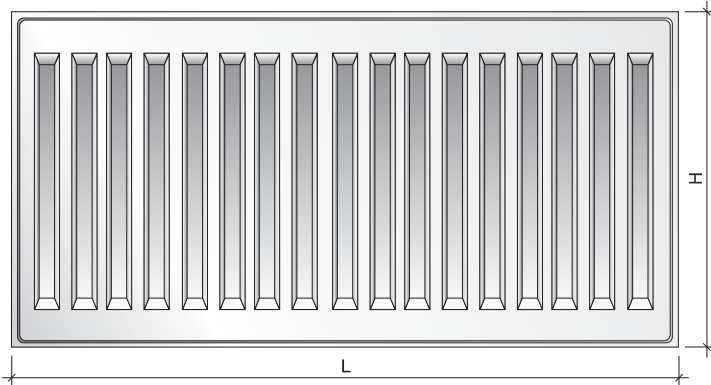
side views



dimensions in mm

H = height
L = length
h = spacing of connectors

front view



mounting distances : mm

type	H 10	H 20	H 30
radiator depth	47	102	152
A-mounting depth	100	100	100
B-total depth	114	202	252
C-connection axis*	84	151	151

* 201 mm in case of the H 30 type radiator after conversion to the left side

water volume and weight

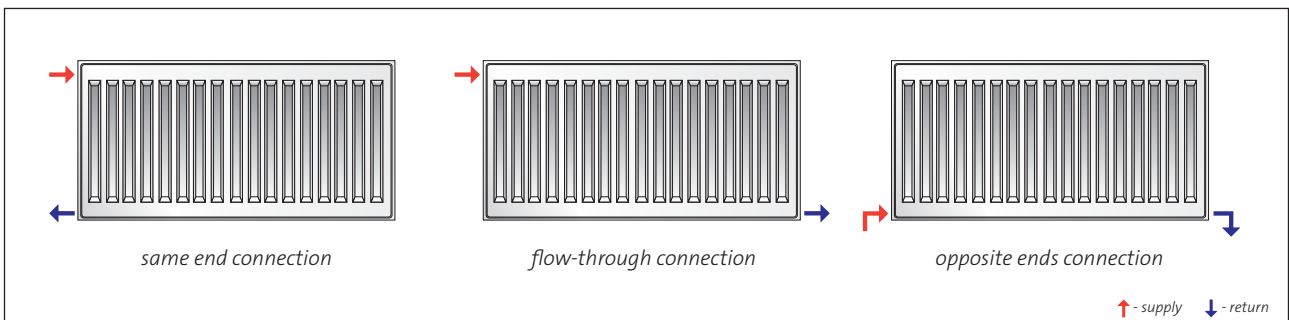
water volume : l/m

height type	300	400	450	500	550	600	900
10	1.7	2.2	2.5	2.7	3.0	3.2	4.5
20	3.4	4.5	5.0	5.5	6.1	6.6	9.0
30	5.1	6.7	7.5	8.2	9.0	9.8	13.3

weight : kg/m

height type	300	400	450	500	550	600	900
10	5.9	7.8	8.8	9.8	10.7	11.7	17.2
20	11.8	15.7	17.6	19.5	21.5	23.4	34.1
30	17.6	23.4	26.3	29.2	32.1	35.0	51.0

recommended connections

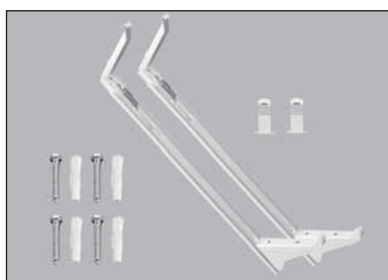


Required quantities of the Monclac MCK 108 hospital brackets for various types and heights of the PURMO hygienic radiators.

Brackets of outreach 108 mm – max. vertical load of 125 kg per single bracket.
(new brackets with reinforced foot structure)

NOTE: Mounting brackets for hygienic radiators must be ordered separately. Mounting brackets are packed in sets of 2 or 3 pieces. In the table, there are presented quantities of single mounting brackets, not sets!!!

height	300			400			450			500			550			600			900		
length [mm]	quantity			quantity			quantity			quantity			quantity			quantity			quantity		
400	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
500	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
600	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
700	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
800	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
900	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1000	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
1100	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
1200	2	2	3	2	2	3	2	2	3	2	2	3	2	2	3	2	2	2	2	2	3
1400	2	3	3	2	2	3	2	2	3	2	2	3	2	2	3	2	2	3	2	3	3
1600	3	3	3	2	3	3	2	3	3	2	3	3	2	3	3	2	2	3	3	3	3
1800	3	3	4	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	4
2000	3	3	4	3	3	4	3	3	4	3	3	4	3	3	4	3	3	3	3	3	4
2300	4	4	4	3	3	4	3	3	4	3	3	4	3	3	4	3	3	4	3	4	4
2600	4	4	5	4	4	4	4	4	4	4	4	5	4	4	5	3	3	4	4	4	5
3000	5	5	6	4	4	5	4	4	5	4	4	5	4	4	5	4	4	5	4	4	5



Rules for selecting sets of the Monclac MCK 108 mounting brackets, using the example of the type 20 hygienic radiator of 600 mm height:

- 1) For the length of 1000 mm - 1 double set AZ02BW2MC601080R9016
- 2) For the length of 2000 mm - 1 triple set AZ02BW3MC601080R9016
- 3) For the length of 3000 mm - 2 double sets AZ02BW2MC601080R9016

description	order code
2-element Monclac MCK-108 set for radiators of 300 mm height	AZ02BW2MC301080R9016
3-element Monclac MCK-108 set for radiators of 300 mm height	AZ02BW3MC301080R9016
2-element Monclac MCK-108 set for radiators of 400 mm height	AZ02BW2MC401080R9016
3-element Monclac MCK-108 set for radiators of 400 mm height	AZ02BW3MC401080R9016
2-element Monclac MCK-108 set for radiators of 450 mm height	AZ02BW2MC451080R9016
3-element Monclac MCK-108 set for radiators of 450 mm height	AZ02BW3MC451080R9016
2-element Monclac MCK-108 set for radiators of 500 mm height	AZ02BW2MC501080R9016
3-element Monclac MCK-108 set for radiators of 500 mm height	AZ02BW3MC501080R9016
2-element Monclac MCK-108 set for radiators of 550 mm height	AZ02BW2MC551080R9016
3-element Monclac MCK-108 set for radiators of 550 mm height	AZ02BW3MC551080R9016
2-element Monclac MCK-108 set for radiators of 600 mm height	AZ02BW2MC601080R9016
3-element Monclac MCK-108 set for radiators of 600 mm height	AZ02BW3MC601080R9016
2-element Monclac MCK-108 set for radiators of 900 mm height	AZ02BW2MC901080R9016
3-element Monclac MCK-108 set for radiators of 900 mm height	AZ02BW3MC901080R9016

type 10

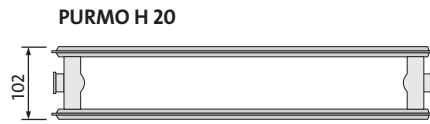
RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO H 10 600 x 1200**



length [mm]	parameters $t_z / t_p / t_i$	height [mm]						
		300	400	450	500	550	600	900
400	75/65/20 °C	139	180	199	218	237	256	361
	55/45/20 °C	70	91	101	111	121	131	185
500	75/65/20 °C	174	225	249	273	297	320	452
	55/45/20 °C	87	113	126	139	151	164	231
600	75/65/20 °C	209	269	299	328	356	383	542
	55/45/20 °C	104	136	151	167	182	197	277
700	75/65/20 °C	244	314	349	382	415	447	632
	55/45/20 °C	122	158	176	194	212	229	323
800	75/65/20 °C	278	359	398	437	474	511	722
	55/45/20 °C	139	181	202	222	242	262	369
900	75/65/20 °C	313	404	448	491	534	575	813
	55/45/20 °C	156	204	227	250	273	295	415
1000	75/65/20 °C	348	449	498	546	593	639	903
	55/45/20 °C	174	226	252	278	303	328	461
1100	75/65/20 °C	383	494	548	601	652	703	993
	55/45/20 °C	191	249	277	305	333	361	508
1200	75/65/20 °C	418	539	598	655	712	767	1084
	55/45/20 °C	209	272	303	333	363	393	554
1400	75/65/20 °C	487	629	697	764	830	895	1264
	55/45/20 °C	243	317	353	389	424	459	646
1600	75/65/20 °C	557	718	797	874	949	1022	1445
	55/45/20 °C	278	362	403	444	485	524	738
1800	75/65/20 °C	626	808	896	983	1067	1150	1625
	55/45/20 °C	313	407	454	500	545	590	831
2000	75/65/20 °C	696	898	996	1092	1186	1278	1806
	55/45/20 °C	348	453	504	555	606	656	923
2300	75/65/20 °C	800	1033	1145	1256	1364	1470	2077
	55/45/20 °C	400	521	580	639	697	754	1061
2600	75/65/20 °C	905	1167	1295	1420	1542	1661	2348
	55/45/20 °C	452	588	655	722	787	852	1200
3000	75/65/20 °C	1044	1347	1494	1638	1779	1917	2709
	55/45/20 °C	522	679	756	833	909	983	1384

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	441	567	628	688	746	802	1135
exponent n	1.3425	1.3260	1.3171	1.3086	1.3001	1.2916	1.2988



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO H 20 600 x 1200**

name _____
type _____
height _____
length _____

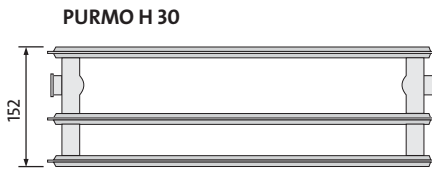
length [mm]	parameters $t_z / t_p / t_i$	height [mm]						
		300	400	450	500	550	600	900
400	75/65/20 °C	252	315	345	375	405	434	606
	55/45/20 °C	130	162	178	193	208	223	309
500	75/65/20 °C	315	394	432	469	506	543	758
	55/45/20 °C	162	203	222	241	260	279	386
600	75/65/20 °C	378	472	518	563	607	651	910
	55/45/20 °C	195	243	267	290	312	335	464
700	75/65/20 °C	441	551	604	657	708	760	1061
	55/45/20 °C	227	284	311	338	364	390	541
800	75/65/20 °C	504	630	690	750	810	868	1213
	55/45/20 °C	260	324	355	386	416	446	618
900	75/65/20 °C	567	708	777	844	911	977	1364
	55/45/20 °C	292	365	400	434	468	502	695
1000	75/65/20 °C	630	787	863	938	1012	1085	1516
	55/45/20 °C	325	405	444	483	520	558	773
1100	75/65/20 °C	693	866	949	1032	1113	1194	1668
	55/45/20 °C	357	446	489	531	572	613	850
1200	75/65/20 °C	756	944	1036	1126	1214	1302	1819
	55/45/20 °C	390	486	533	579	625	669	927
1400	75/65/20 °C	882	1102	1208	1313	1417	1519	2122
	55/45/20 °C	455	568	622	676	729	781	1082
1600	75/65/20 °C	1008	1259	1381	1501	1619	1736	2426
	55/45/20 °C	520	649	711	772	833	892	1236
1800	75/65/20 °C	1134	1417	1553	1688	1822	1953	2729
	55/45/20 °C	585	730	800	869	937	1004	1391
2000	75/65/20 °C	1260	1574	1726	1876	2024	2170	3032
	55/45/20 °C	650	811	889	965	1041	1115	1545
2300	75/65/20 °C	1449	1810	1985	2157	2328	2496	3487
	55/45/20 °C	747	932	1022	1110	1197	1283	1777
2600	75/65/20 °C	1638	2046	2244	2439	2631	2821	3942
	55/45/20 °C	845	1054	1155	1255	1353	1450	2009
3000	75/65/20 °C	1890	2361	2589	2814	3036	3255	4548
	55/45/20 °C	975	1216	1333	1448	1561	1673	2318

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	790	987	1082	1177	1270	1361	1908
exponent n	1.2815	1.2840	1.2846	1.2856	1.2866	1.2876	1.3042

type 30

RADIATOR DESCRIPTION - AN EXAMPLE : PURMO H 30 600 x 1200



name
type
height
length



length [mm]	parameters $t_z / t_p / t_i$	height [mm]						
		300	400	450	500	550	600	900
400	75/65/20 °C	350	439	482	524	564	604	828
	55/45/20 °C	179	224	246	267	287	307	414
500	75/65/20 °C	437	549	549	655	705	755	1035
	55/45/20 °C	224	280	307	333	359	384	517
600	75/65/20 °C	524	659	723	785	846	906	1241
	55/45/20 °C	268	336	369	400	430	460	620
700	75/65/20 °C	612	769	844	916	987	1057	1448
	55/45/20 °C	313	392	430	467	502	537	724
800	75/65/20 °C	699	878	964	1047	1128	1208	1655
	55/45/20 °C	358	449	492	533	574	614	827
900	75/65/20 °C	787	988	1085	1178	1269	1359	1862
	55/45/20 °C	403	505	553	600	646	691	931
1000	75/65/20 °C	874	1098	1205	1309	1410	1510	2069
	55/45/20 °C	447	561	615	667	717	767	1034
1100	75/65/20 °C	961	1208	1326	1440	1551	1661	2276
	55/45/20 °C	492	617	676	733	789	844	1138
1200	75/65/20 °C	1049	1318	1446	1571	1692	1812	2483
	55/45/20 °C	537	673	737	800	861	921	1241
1400	75/65/20 °C	1224	1537	1687	1833	1974	2114	2897
	55/45/20 °C	626	785	860	933	1004	1074	1448
1600	75/65/20 °C	1398	1757	1928	2094	2256	2416	3310
	55/45/20 °C	716	897	983	1067	1148	1228	1655
1800	75/65/20 °C	1573	1976	2169	2356	2538	2718	3724
	55/45/20 °C	805	1009	1106	1200	1291	1381	1861
2000	75/65/20 °C	1748	2196	2410	2618	2820	3020	4138
	55/45/20 °C	895	1121	1229	1334	1435	1535	2068
2300	75/65/20 °C	2010	2525	2772	3011	3243	3473	4759
	55/45/20 °C	1029	1290	1413	1534	1650	1765	2378
2600	75/65/20 °C	2272	2855	3133	3403	3666	3926	5379
	55/45/20 °C	1163	1458	1598	1734	1865	1995	2689
3000	75/65/20 °C	2622	3294	3615	3927	4230	4530	6207
	55/45/20 °C	1342	1682	1844	2000	2152	2302	3102

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C exponent n	1098	1381	1516	1648	1776	1902	2621
	1.2957	1.3000	1.3028	1.3051	1.3075	1.3098	1.3418



VENTIL HYGIENE (PURMO HV)

The PURMO Ventil Hygiene panel radiators with profiled heating panels are not equipped with convection fins. Due to the absence of side covers and a top grille, they are intended for applications in health care and other facilities of elevated hygienic requirements. Two bottom and four side G ½ " threaded female connectors allow for bottom or side connection. The radiator is also equipped with a built-in thermostatic Oventrop valve insert providing pre-setting.

technical specifications

- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 2 x G ½ " bottom, right side connectors (left side - available on request)
4 x G ½ " side connectors
- Working pressure : 10 bar
- Maximal temperature : 110 °C
- Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator : plugs, air vent.

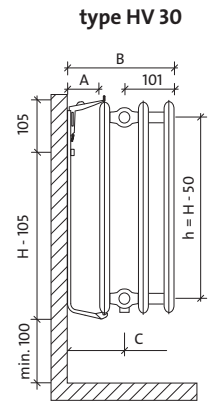
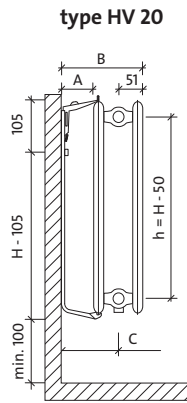
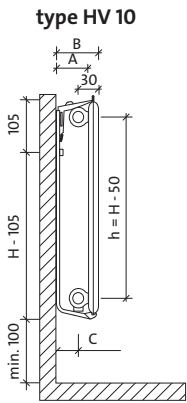
NOTE:

Mounting brackets must be ordered separately. For the method of selecting and ordering see page 36



The Ventil Hygiene radiators are also available in a special version with additional corrosion protection.

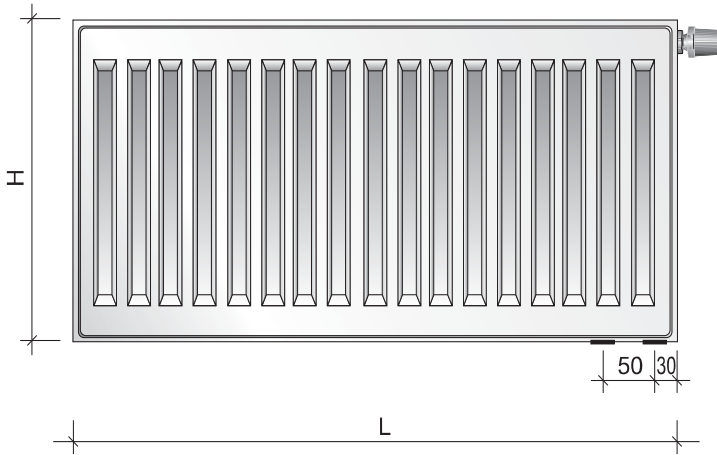
side views



dimensions in mm

H = height
L = length
h = spacing of connectors

front view



mounting distances : mm

type	HV 10	HV 20	HV 30
radiator depth	47	102	152
A-mounting depth	100	100	100
B-total depth	114	202	252
C-connection axis*	84	151	151

* 201 mm in case of the HV 30 type radiator after conversion to the left side

water volume and weight

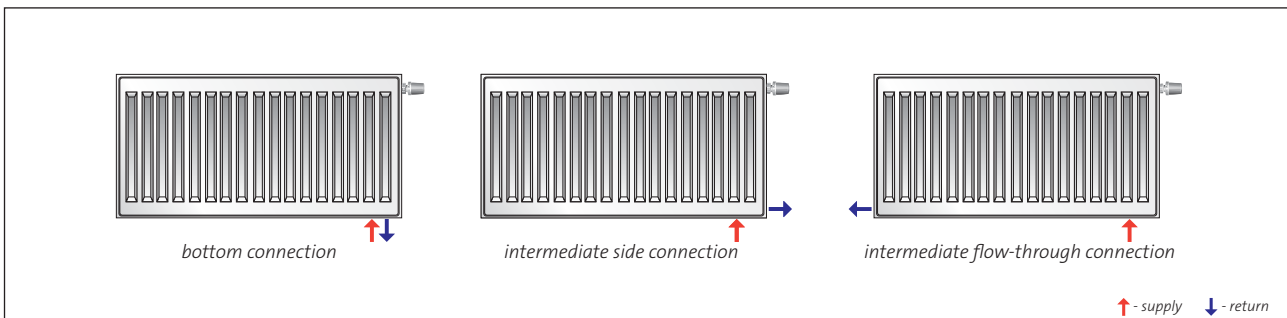
water volume : l/m

height type	300	400	450	500	600	900
10	1.7	2.2	2.5	2.7	3.2	4.5
20	3.4	4.5	5.0	5.5	6.6	9.0
30	5.1	6.7	7.5	8.2	9.8	13.3

weight : kg/m

height type	300	400	450	500	600	900
10	5.9	7.8	8.8	9.8	11.7	17.2
20	11.8	15.0	17.6	19.5	23.4	34.1
30	17.6	23.4	26.3	29.2	35.0	51.0

recommended connections

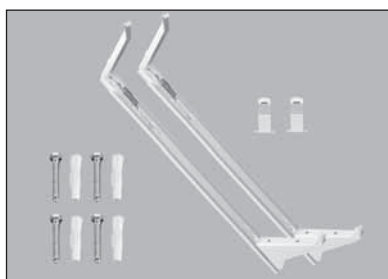


Required quantities of the Monclac MCK 108 hospital brackets for various types and heights of the PURMO hygienic radiators.

Brackets of outreach 108 mm – max. vertical load of 125 kg per single bracket.
(new brackets with reinforced foot structure)

NOTE: Mounting brackets for hygienic radiators must be ordered separately. Mounting brackets are packed in sets of 2 or 3 pieces. In the table, there are presented quantities of single mounting brackets, not sets!!!

height	300			400			450			500			600			900		
length [mm]	quantity			quantity			quantity			quantity			quantity			quantity		
400	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
500	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
600	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
700	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
800	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
900	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
1000	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	
1100	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	
1200	2	2	3	2	2	3	2	2	3	2	2	3	2	2	2	2	3	
1400	2	3	3	2	2	3	2	2	3	2	2	3	2	2	3	2	3	
1600	3	3	3	2	3	3	2	3	3	2	3	3	2	2	3	3	3	
1800	3	3	4	3	3	3	3	3	3	3	3	3	2	3	3	3	4	
2000	3	3	4	3	3	4	3	3	4	3	3	4	3	3	3	3	4	
2300	4	4	4	3	3	4	3	3	4	3	3	4	3	3	4	3	4	
2600	4	4	5	4	4	4	4	4	4	4	4	5	3	3	4	4	5	
3000	5	5	6	4	4	5	4	4	5	4	4	5	4	4	5	4	5	



Rules for selecting sets of the Monclac MCK 108 mounting brackets, using the example of the type 20 hygienic radiator of 600 mm height:

- 1) For the length of 1000 mm - 1 double set AZ02BW2MC601080R9016
- 2) For the length of 2000 mm - 1 triple set AZ02BW3MC601080R9016
- 3) For the length of 3000 mm - 2 double sets AZ02BW2MC601080R9016

description	order code
2-element Monclac MCK-108 set for radiators of 300 mm height	AZ02BW2MC301080R9016
3-element Monclac MCK-108 set for radiators of 300 mm height	AZ02BW3MC301080R9016
2-element Monclac MCK-108 set for radiators of 400 mm height	AZ02BW2MC401080R9016
3-element Monclac MCK-108 set for radiators of 400 mm height	AZ02BW3MC401080R9016
2-element Monclac MCK-108 set for radiators of 450 mm height	AZ02BW2MC451080R9016
3-element Monclac MCK-108 set for radiators of 450 mm height	AZ02BW3MC451080R9016
2-element Monclac MCK-108 set for radiators of 500 mm height	AZ02BW2MC501080R9016
3-element Monclac MCK-108 set for radiators of 500 mm height	AZ02BW3MC501080R9016
2-element Monclac MCK-108 set for radiators of 600 mm height	AZ02BW2MC601080R9016
3-element Monclac MCK-108 set for radiators of 600 mm height	AZ02BW3MC601080R9016
2-element Monclac MCK-108 set for radiators of 900 mm height	AZ02BW2MC901080R9016
3-element Monclac MCK-108 set for radiators of 900 mm height	AZ02BW3MC901080R9016

type 10

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO HV 10 600 x 1200 L**



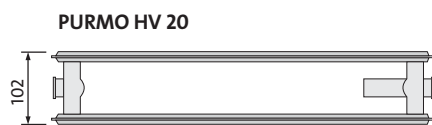
name _____
 type _____
 height _____
 length _____
 L : only for the left side version
 (no letter: standard, i.e. the right side version)



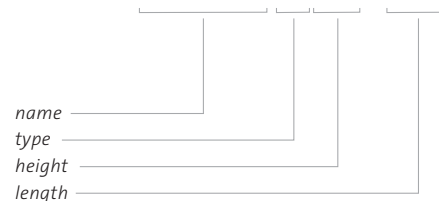
length [mm]	parameters $t_z / t_p / t_i$	height [mm]					
		300	400	450	500	600	900
400	75/65/20 °C	139	180	199	218	256	361
	55/45/20 °C	70	91	101	111	131	185
500	75/65/20 °C	174	225	249	273	320	452
	55/45/20 °C	87	113	126	139	164	231
600	75/65/20 °C	209	269	299	328	383	542
	55/45/20 °C	104	136	151	167	197	277
700	75/65/20 °C	244	314	349	382	447	632
	55/45/20 °C	122	158	176	194	229	323
800	75/65/20 °C	278	359	398	437	511	722
	55/45/20 °C	139	181	202	222	262	369
900	75/65/20 °C	313	404	448	491	575	813
	55/45/20 °C	156	204	227	250	295	415
1000	75/65/20 °C	348	449	498	546	639	903
	55/45/20 °C	174	226	252	278	328	461
1100	75/65/20 °C	383	494	548	601	703	993
	55/45/20 °C	191	249	277	305	361	508
1200	75/65/20 °C	418	539	598	655	767	1084
	55/45/20 °C	209	272	303	333	393	554
1400	75/65/20 °C	487	629	697	764	895	1264
	55/45/20 °C	243	317	353	389	459	646
1600	75/65/20 °C	557	718	797	874	1022	1445
	55/45/20 °C	278	362	403	444	524	738
1800	75/65/20 °C	626	808	896	983	1150	1625
	55/45/20 °C	313	407	454	500	590	831
2000	75/65/20 °C	696	898	996	1092	1278	1806
	55/45/20 °C	348	453	504	555	656	923
2300	75/65/20 °C	800	1033	1145	1256	1470	2077
	55/45/20 °C	400	521	580	639	754	1061
2600	75/65/20 °C	905	1167	1295	1420	1661	2348
	55/45/20 °C	452	588	655	722	852	1200
3000	75/65/20 °C	1044	1347	1494	1638	1917	2709
	55/45/20 °C	522	679	756	833	983	1384

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	441	567	628	688	802	1135
exponent n	1.3425	1.3260	1.3171	1.3086	1.2916	1.2988



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO HV 20 600 x 1200**



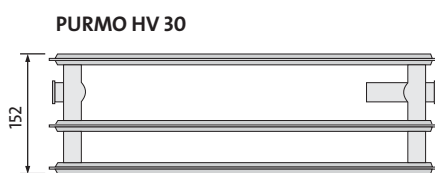
length [mm]	parameters $t_z / t_p / t_i$	height [mm]					
		300	400	450	500	600	900
400	75/65/20 °C	252	315	345	375	434	606
	55/45/20 °C	130	162	178	193	223	309
500	75/65/20 °C	315	394	432	469	543	758
	55/45/20 °C	162	203	222	241	279	386
600	75/65/20 °C	378	472	518	563	651	910
	55/45/20 °C	195	243	267	290	335	464
700	75/65/20 °C	441	551	604	657	760	1061
	55/45/20 °C	227	284	311	338	390	541
800	75/65/20 °C	504	630	690	750	868	1213
	55/45/20 °C	260	324	355	386	446	618
900	75/65/20 °C	567	708	777	844	977	1364
	55/45/20 °C	292	365	400	434	502	695
1000	75/65/20 °C	630	787	863	938	1085	1516
	55/45/20 °C	325	405	444	483	558	773
1100	75/65/20 °C	693	866	949	1032	1194	1668
	55/45/20 °C	357	446	489	531	613	850
1200	75/65/20 °C	756	944	1036	1126	1302	1819
	55/45/20 °C	390	486	533	579	669	927
1400	75/65/20 °C	882	1102	1208	1313	1519	2122
	55/45/20 °C	455	568	622	676	781	1082
1600	75/65/20 °C	1008	1259	1381	1501	1736	2426
	55/45/20 °C	520	649	711	772	892	1236
1800	75/65/20 °C	1134	1417	1553	1688	1953	2729
	55/45/20 °C	585	730	800	869	1004	1391
2000	75/65/20 °C	1260	1574	1726	1876	2170	3032
	55/45/20 °C	650	811	889	965	1115	1545
2300	75/65/20 °C	1449	1810	1985	2157	2496	3487
	55/45/20 °C	747	932	1022	1110	1283	1777
2600	75/65/20 °C	1638	2046	2244	2439	2821	3942
	55/45/20 °C	845	1054	1155	1255	1450	2009
3000	75/65/20 °C	1890	2361	2589	2814	3255	4548
	55/45/20 °C	975	1216	1333	1448	1673	2318

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	790	987	1082	1177	1361	1908
exponent n	1.2815	1.2840	1.2846	1.2856	1.2876	1.3042

type 30

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO HV 30 600 x 1200 L**



name _____
 type _____
 height _____
 length _____
 L : only for the left side version
 (no letter: standard, i.e. the right side version)



length [mm]	parameters $t_z / t_p / t_i$	height [mm]					
		300	400	450	500	600	900
400	75/65/20 °C	350	439	482	524	604	828
	55/45/20 °C	179	224	246	267	307	414
500	75/65/20 °C	437	549	549	655	755	1035
	55/45/20 °C	224	280	307	333	384	517
600	75/65/20 °C	524	659	723	785	906	1241
	55/45/20 °C	268	336	369	400	460	620
700	75/65/20 °C	612	769	844	916	1057	1448
	55/45/20 °C	313	392	430	467	537	724
800	75/65/20 °C	699	878	964	1047	1208	1655
	55/45/20 °C	358	449	492	533	614	827
900	75/65/20 °C	787	988	1085	1178	1359	1862
	55/45/20 °C	403	505	553	600	691	931
1000	75/65/20 °C	874	1098	1205	1309	1510	2069
	55/45/20 °C	447	561	615	667	767	1034
1100	75/65/20 °C	961	1208	1326	1440	1661	2276
	55/45/20 °C	492	617	676	733	844	1138
1200	75/65/20 °C	1049	1318	1446	1571	1812	2483
	55/45/20 °C	537	673	737	800	921	1241
1400	75/65/20 °C	1224	1537	1687	1833	2114	2897
	55/45/20 °C	626	785	860	933	1074	1448
1600	75/65/20 °C	1398	1757	1928	2094	2416	3310
	55/45/20 °C	716	897	983	1067	1228	1655
1800	75/65/20 °C	1573	1976	2169	2356	2718	3724
	55/45/20 °C	805	1009	1106	1200	1381	1861
2000	75/65/20 °C	1748	2196	2410	2618	3020	4138
	55/45/20 °C	895	1121	1229	1334	1535	2068
2300	75/65/20 °C	2010	2525	2772	3011	3473	4759
	55/45/20 °C	1029	1290	1413	1534	1765	2378
2600	75/65/20 °C	2272	2855	3133	3403	3926	5379
	55/45/20 °C	1163	1458	1598	1734	1995	2689
3000	75/65/20 °C	2622	3294	3615	3927	4530	6207
	55/45/20 °C	1342	1682	1844	2000	2302	3102

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1098	1381	1516	1648	1902	2621
exponent n	1.2957	1.3000	1.3028	1.3051	1.3098	1.3418



PLAN COMPACT (PURMO FC)

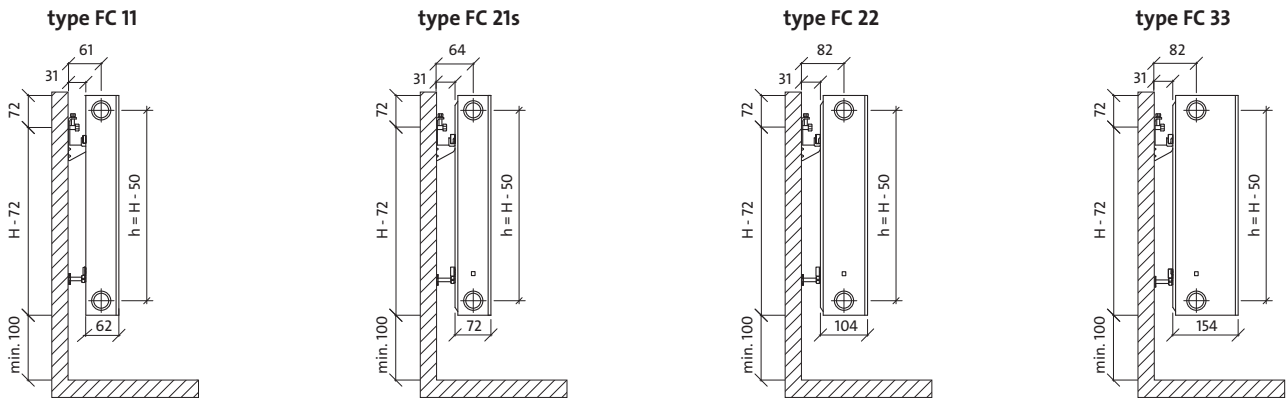
The PURMO Plan Contact panel radiators stand out due to their completely flat front panel. The panel is glued to the profiled front, base heating panel in a manner concealing any protruding edges, when looking at the radiator from the front. The radiators are equipped with side covers and a top grille. Four G ½ " threaded female connectors allow for side connection on both right and left side

technical specifications

- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 4 x G ½ " side connectors
- Working pressure : 10 bar
- Maximal temperature : 110 °C
- Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator: brackets, plug, air vent.



side views



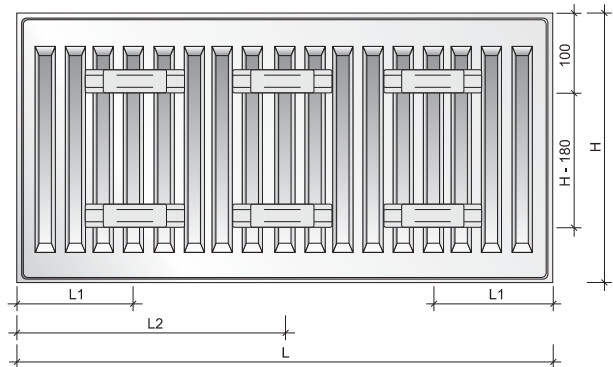
dimensions in mm

H = height
 L = length
 h = spacing of connectors

front view



rear view



water volume, weight and mounting distances

water volume : l/m

height type	300	400	500	550	600	900
11	1.7	2.2	2.7	3.0	3.2	4.5
21s	3.4	4.5	5.5	6.1	6.6	9.0
22	3.4	4.5	5.5	6.1	6.6	9.0
33	5.1	6.7	8.2	9.0	9.8	13.3

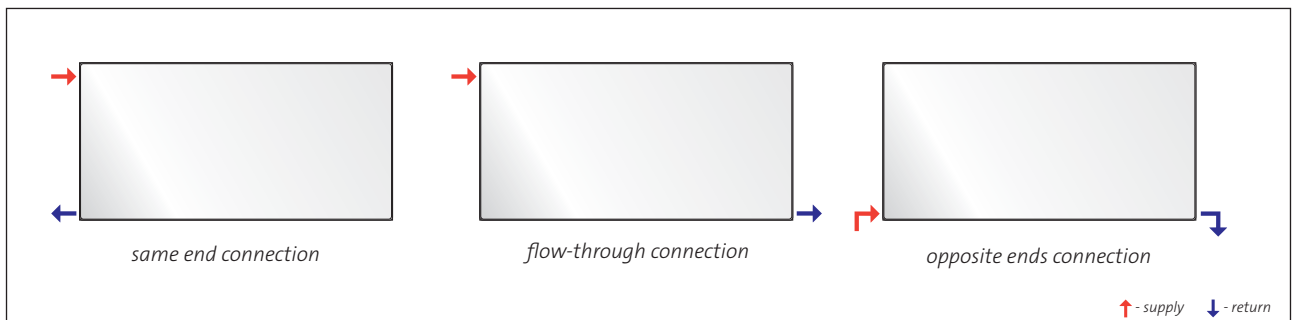
weight : kg/m

height type	300	400	500	550	600	900
11	11.7	15.8	19.9	22.0	24.0	36.2
21s	16.7	22.3	27.9	30.7	33.5	50.1
22	19.0	25.6	32.2	35.5	38.8	58.8
33	27.2	36.6	46.1	50.8	55.5	83.6

mounting distances : mm

type	FC 11		FC 21s, FC 22, FC 33	
	L1	L2	L1	L2
400-1600	117	-	133	-
1800	117	917	133	900
2000	117	1017	133	1000
2300	117	1150	133	1167
2600	117	1317	133	1300
3000	117	1517	133	1500

recommended connections





RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FC 11 600 x 1200**



name _____
type _____
height _____
length _____

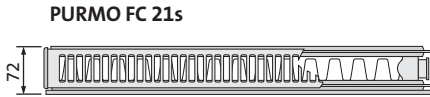
length [mm]	parameters $t_z / t_p / t_i$	height [mm]					
		300	400	500	550	600	900
400	75/65/20 °C	212	272	329	357	384	539
	55/45/20 °C	109	140	170	184	198	275
500	75/65/20 °C	265	340	412	447	481	674
	55/45/20 °C	136	175	212	230	248	344
600	75/65/20 °C	317	408	494	536	577	808
	55/45/20 °C	164	210	254	276	297	412
700	75/65/20 °C	370	476	576	625	673	943
	55/45/20 °C	191	245	297	322	347	481
800	75/65/20 °C	423	544	658	714	769	1078
	55/45/20 °C	218	280	339	368	396	550
900	75/65/20 °C	476	612	741	804	865	1212
	55/45/20 °C	245	315	382	414	446	619
1000	75/65/20 °C	529	680	823	893	961	1347
	55/45/20 °C	273	350	424	460	495	687
1100	75/65/20 °C	582	748	905	982	1057	1482
	55/45/20 °C	300	386	467	506	545	756
1200	75/65/20 °C	635	816	988	1072	1153	1616
	55/45/20 °C	327	421	509	552	594	825
1400	75/65/20 °C	741	952	1152	1250	1345	1886
	55/45/20 °C	382	491	594	644	693	962
1600	75/65/20 °C	846	1088	1317	1429	1538	2155
	55/45/20 °C	436	561	679	736	792	1100
1800	75/65/20 °C	952	1224	1481	1607	1730	2425
	55/45/20 °C	491	631	763	828	891	1237
2000	75/65/20 °C	1058	1360	1646	1786	1922	2694
	55/45/20 °C	545	701	848	920	990	1375
2300	75/65/20 °C	1217	1564	1893	2054	2210	
	55/45/20 °C	627	806	975	1058	1139	
2600	75/65/20 °C	1375	1768	2140	2322	2499	
	55/45/20 °C	709	911	1103	1196	1287	
3000	75/65/20 °C	1587	2040	2469	2679	2883	
	55/45/20 °C	818	1051	1272	1380	1485	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	663	852	1032	1120	1205	1694
exponent n	1.2820	1.2820	1.2827	1.2829	1.2831	1.3013

type 21s

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FC 21s 600 x 1200**



length [mm]	parameters $t_z / t_p / t_i$	height [mm]					
		300	400	500	550	600	900
400	75/65/20 °C	293	372	445	481	515	706
	55/45/20 °C	151	191	228	246	264	354
500	75/65/20 °C	366	465	557	601	644	883
	55/45/20 °C	189	239	286	308	329	442
600	75/65/20 °C	439	557	668	721	773	1059
	55/45/20 °C	227	287	343	370	395	531
700	75/65/20 °C	512	650	779	841	902	1236
	55/45/20 °C	265	335	400	431	461	619
800	75/65/20 °C	586	743	890	962	1030	1412
	55/45/20 °C	302	383	457	493	527	707
900	75/65/20 °C	659	836	1002	1082	1159	1589
	55/45/20 °C	340	430	514	554	593	796
1000	75/65/20 °C	732	929	1113	1202	1288	1765
	55/45/20 °C	378	478	571	616	659	884
1100	75/65/20 °C	805	1022	1224	1322	1417	1942
	55/45/20 °C	416	526	628	677	725	973
1200	75/65/20 °C	878	1115	1336	1442	1546	2118
	55/45/20 °C	454	574	685	739	791	1061
1400	75/65/20 °C	1025	1301	1558	1683	1803	2471
	55/45/20 °C	529	670	800	862	923	1238
1600	75/65/20 °C	1171	1486	1781	1923	2061	2824
	55/45/20 °C	605	765	914	985	1054	1415
1800	75/65/20 °C	1318	1672	2003	2164	2318	3177
	55/45/20 °C	680	861	1028	1109	1186	1592
2000	75/65/20 °C	1464	1858	2226	2404	2576	3530
	55/45/20 °C	756	957	1142	1232	1318	1769
2300	75/65/20 °C	1684	2137	2560	2765	2962	
	55/45/20 °C	869	1100	1314	1417	1516	
2600	75/65/20 °C	1903	2415	2894	3125	3349	
	55/45/20 °C	983	1243	1485	1601	1713	
3000	75/65/20 °C	2196	2787	3339	3606	3864	
	55/45/20 °C	1134	1435	1714	1848	1977	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	917	1165	1397	1510	1619	2234
exponent n	1.2786	1.2850	1.2907	1.2937	1.2967	1.3371



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FC 22 600 x 1200**

name _____
type _____
height _____
length _____

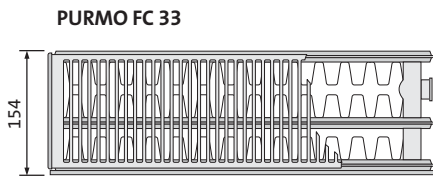
length [mm]	parameters $t_z / t_p / t_i$	height [mm]					
		300	400	500	550	600	900
400	75/65/20 °C	375	479	578	624	670	920
	55/45/20 °C	191	244	292	315	337	458
500	75/65/20 °C	469	599	722	781	838	1151
	55/45/20 °C	239	304	365	394	422	573
600	75/65/20 °C	562	719	866	937	1006	1381
	55/45/20 °C	287	365	438	472	506	688
700	75/65/20 °C	656	839	1011	1093	1173	1611
	55/45/20 °C	335	426	511	551	590	802
800	75/65/20 °C	750	958	1155	1249	1341	1841
	55/45/20 °C	383	487	584	630	674	917
900	75/65/20 °C	843	1078	1300	1405	1508	2071
	55/45/20 °C	431	548	657	708	759	1031
1000	75/65/20 °C	937	1198	1444	1561	1676	2301
	55/45/20 °C	479	609	730	787	843	1146
1100	75/65/20 °C	1031	1318	1588	1717	1844	2531
	55/45/20 °C	526	670	803	866	927	1261
1200	75/65/20 °C	1124	1438	1733	1873	2011	2761
	55/45/20 °C	574	731	876	945	1012	1375
1400	75/65/20 °C	1312	1677	2022	2185	2346	3221
	55/45/20 °C	670	852	1022	1102	1180	1604
1600	75/65/20 °C	1499	1917	2310	2498	2682	3682
	55/45/20 °C	766	974	1168	1259	1349	1833
1800	75/65/20 °C	1687	2156	2599	2810	3017	4142
	55/45/20 °C	861	1096	1314	1417	1517	2063
2000	75/65/20 °C	1874	2396	2888	3122	3352	4602
	55/45/20 °C	957	1218	1460	1574	1686	2292
2300	75/65/20 °C	2155	2755	3321	3590	3855	
	55/45/20 °C	1101	1400	1679	1811	1939	
2600	75/65/20 °C	2436	3115	3754	4059	4358	
	55/45/20 °C	1244	1583	1898	2047	2192	
3000	75/65/20 °C	2811	3594	4332	4683	5028	
	55/45/20 °C	1436	1826	2190	2362	2529	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1178	1509	1822	1972	2119	2919
exponent n	1.3000	1.3100	1.3197	1.3246	1.3295	1.3488

type 33

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FC 33 600 x 1200**



length [mm]	parameters $t_z / t_p / t_i$	height [mm]					
		300	400	500	550	600	900
400	75/65/20 °C	526	666	798	861	924	1268
	55/45/20 °C	266	336	400	431	462	628
500	75/65/20 °C	657	832	997	1077	1155	1586
	55/45/20 °C	333	420	501	539	577	785
600	75/65/20 °C	788	998	1196	1292	1385	1903
	55/45/20 °C	399	503	601	647	692	941
700	75/65/20 °C	920	1165	1396	1507	1616	2220
	55/45/20 °C	466	587	701	755	808	1098
800	75/65/20 °C	1051	1331	1595	1722	1847	2537
	55/45/20 °C	532	671	801	863	923	1255
900	75/65/20 °C	1183	1498	1795	1938	2078	2854
	55/45/20 °C	599	755	901	971	1039	1412
1000	75/65/20 °C	1314	1664	1994	2153	2309	3171
	55/45/20 °C	666	839	1001	1079	1154	1569
1100	75/65/20 °C	1445	1830	2193	2368	2540	3488
	55/45/20 °C	732	923	1101	1186	1270	1726
1200	75/65/20 °C	1577	1997	2393	2584	2771	3805
	55/45/20 °C	799	1007	1201	1294	1385	1883
1400	75/65/20 °C	1840	2330	2792	3014	3233	4439
	55/45/20 °C	932	1175	1402	1510	1616	2197
1600	75/65/20 °C	2102	2662	3190	3445	3694	5074
	55/45/20 °C	1065	1343	1602	1726	1847	2511
1800	75/65/20 °C	2365	2995	3589	3875	4156	5708
	55/45/20 °C	1198	1510	1802	1941	2077	2824
2000	75/65/20 °C	2628	3328	3988	4306	4618	6342
	55/45/20 °C	1331	1678	2002	2157	2308	3138
2300	75/65/20 °C	3022	3827	4586	4952	5311	
	55/45/20 °C	1531	1930	2303	2481	2655	
2600	75/65/20 °C	3416	4326	5184	5598	6003	
	55/45/20 °C	1731	2182	2603	2804	3001	
3000	75/65/20 °C	3942	4992	5982	6459	6927	
	55/45/20 °C	1997	2517	3003	3236	3462	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1657	2102	2525	2725	2923	4007
exponent n	1.3159	1.3250	1.3331	1.3374	1.3417	1.3612



PLAN VENTIL COMPACT (PURMO FCV)

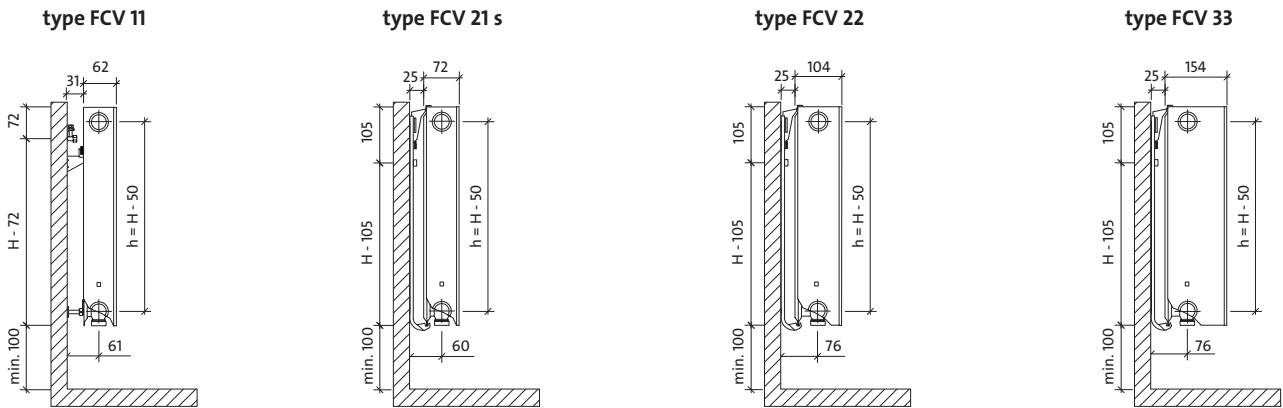
The versatile PURMO Plan Ventil Contact panel radiators stand out due to their completely flat front panel. The panel is glued to the profiled, front base heating panel in a manner concealing any protruding edges, when looking at the radiator from the front. The radiators are equipped with convection fins as well as side covers and a top grille. Two bottom and four side G ½ " threaded female connectors allow for bottom or side connection. The radiator is also equipped with a built-in thermostatic Oventrop valve insert providing pre-setting.

technical specifications

- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 2 x G ½ " bottom, right side connectors (left side - available on request)
4 x G ½ " side connectors
- Working pressure : 10 bar
- Maximal temperature : 110 °C
- Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator : brackets, plugs, air vent.



side views



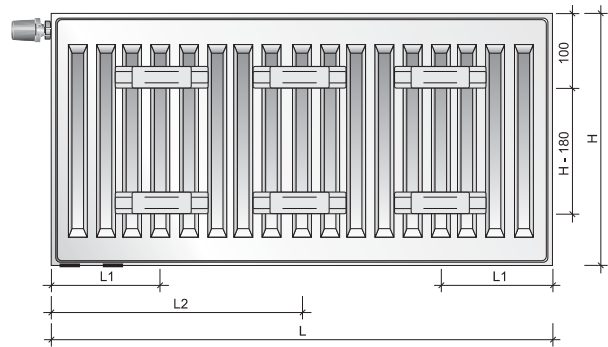
dimensions in mm

H = height
 L = length
 h = spacing of connectors

front view



rear view - FCV 11 type only



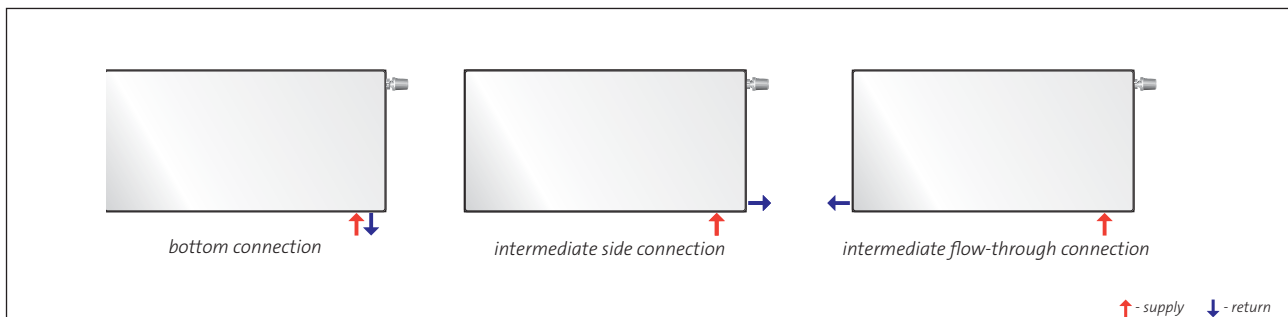
water volume, weight and mounting distances

water volume : l/m					
type \ height	300	400	500	600	900
11	1.7	2.2	2.7	3.2	4.5
21s	3.4	4.5	5.5	6.6	9.0
22	3.4	4.5	5.5	6.6	9.0
33	5.1	6.7	8.2	9.8	13.3

weight : kg/m					
type \ height	300	400	500	600	900
11	11.7	15.8	19.9	24.0	36.2
21s	16.7	22.3	27.9	33.5	50.1
22	19.0	25.6	32.2	38.8	58.8
33	27.2	36.6	46.1	55.5	83.6

mounting distances : mm		
type	FCV 11	
	L1	L2
400-1600	117	-
1800	117	917
2000	117	1017
2300	117	1150
2600	117	1317
3000	117	1517

recommended connections





RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FCV 11 600 x 1200 L**

name _____
 type _____
 height _____
 length _____
 L : only for the left side version
 (no letter: standard, i.e. the right side version)

length [mm]	parameters $t_z / t_p / t_i$	height [mm]				
		300	400	500	600	900
400	75/65/20 °C	212	272	329	384	539
	55/45/20 °C	109	140	170	198	275
500	75/65/20 °C	265	340	412	481	674
	55/45/20 °C	136	175	212	248	344
600	75/65/20 °C	317	408	494	577	808
	55/45/20 °C	164	210	254	297	412
700	75/65/20 °C	370	476	576	673	943
	55/45/20 °C	191	245	297	347	481
800	75/65/20 °C	423	544	658	769	1078
	55/45/20 °C	218	280	339	396	550
900	75/65/20 °C	476	612	741	865	1212
	55/45/20 °C	245	315	382	446	619
1000	75/65/20 °C	529	680	823	961	1347
	55/45/20 °C	273	350	424	495	687
1100	75/65/20 °C	582	748	905	1057	1482
	55/45/20 °C	300	386	467	545	756
1200	75/65/20 °C	635	816	988	1153	1616
	55/45/20 °C	327	421	509	594	825
1400	75/65/20 °C	741	952	1152	1345	1886
	55/45/20 °C	382	491	594	693	962
1600	75/65/20 °C	846	1088	1317	1538	2155
	55/45/20 °C	436	561	679	792	1100
1800	75/65/20 °C	952	1224	1481	1730	2425
	55/45/20 °C	491	631	763	891	1237
2000	75/65/20 °C	1058	1360	1646	1922	2694
	55/45/20 °C	545	701	848	990	1375
2300	75/65/20 °C	1217	1564	1893	2210	
	55/45/20 °C	627	806	975	1139	
2600	75/65/20 °C	1375	1768	2140	2499	
	55/45/20 °C	709	911	1103	1287	
3000	75/65/20 °C	1587	2040	2469	2883	
	55/45/20 °C	818	1051	1272	1485	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C exponent n	663 1.2820	852 1.2820	1032 1.2827	1205 1.2831	1694 1.3013
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type 21s

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FCV 21s 600 x 1200 L**



name _____
 type _____
 height _____
 length _____
 L : only for the left side version
 (no letter: standard, i.e. the right side version)



length [mm]	parameters $t_z / t_p / t_i$	height [mm]				
		300	400	500	600	900
400	75/65/20 °C	293	372	445	515	706
	55/45/20 °C	151	191	228	264	354
500	75/65/20 °C	366	465	557	644	883
	55/45/20 °C	189	239	286	329	442
600	75/65/20 °C	439	557	668	773	1059
	55/45/20 °C	227	287	343	395	531
700	75/65/20 °C	512	650	779	902	1236
	55/45/20 °C	265	335	400	461	619
800	75/65/20 °C	586	743	890	1030	1412
	55/45/20 °C	302	383	457	527	707
900	75/65/20 °C	659	836	1002	1159	1589
	55/45/20 °C	340	430	514	593	796
1000	75/65/20 °C	732	929	1113	1288	1765
	55/45/20 °C	378	478	571	659	884
1100	75/65/20 °C	805	1022	1224	1417	1942
	55/45/20 °C	416	526	628	725	973
1200	75/65/20 °C	878	1115	1336	1546	2118
	55/45/20 °C	454	574	685	791	1061
1400	75/65/20 °C	1025	1301	1558	1803	2471
	55/45/20 °C	529	670	800	923	1238
1600	75/65/20 °C	1171	1486	1781	2061	2824
	55/45/20 °C	605	765	914	1054	1415
1800	75/65/20 °C	1318	1672	2003	2318	3177
	55/45/20 °C	680	861	1028	1186	1592
2000	75/65/20 °C	1464	1858	2226	2576	3530
	55/45/20 °C	756	957	1142	1318	1769
2300	75/65/20 °C	1684	2137	2560	2962	
	55/45/20 °C	869	1100	1314	1516	
2600	75/65/20 °C	1903	2415	2894	3349	
	55/45/20 °C	983	1243	1485	1713	
3000	75/65/20 °C	2196	2787	3339	3864	
	55/45/20 °C	1134	1435	1714	1977	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	917	1165	1397	1619	2234
exponent n	1.2786	1.2850	1.2907	1.2967	1.3371



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FCV 22 600 x 1200 L**



name _____
 type _____
 height _____
 length _____
 L : only for the left side version
 (no letter: standard, i.e. the right side version)

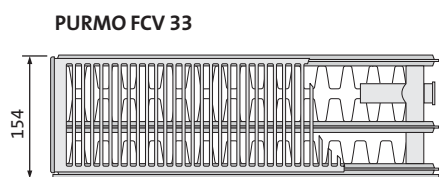
length [mm]	parameters $t_z / t_p / t_i$	height [mm]				
		300	400	500	600	900
400	75/65/20 °C	375	479	578	670	920
	55/45/20 °C	191	244	292	337	458
500	75/65/20 °C	469	599	722	838	1151
	55/45/20 °C	239	304	365	422	573
600	75/65/20 °C	562	719	866	1006	1381
	55/45/20 °C	287	365	438	506	688
700	75/65/20 °C	656	839	1011	1173	1611
	55/45/20 °C	335	426	511	590	802
800	75/65/20 °C	750	958	1155	1341	1841
	55/45/20 °C	383	487	584	674	917
900	75/65/20 °C	843	1078	1300	1508	2071
	55/45/20 °C	431	548	657	759	1031
1000	75/65/20 °C	937	1198	1444	1676	2301
	55/45/20 °C	479	609	730	843	1146
1100	75/65/20 °C	1031	1318	1588	1844	2531
	55/45/20 °C	526	670	803	927	1261
1200	75/65/20 °C	1124	1438	1733	2011	2761
	55/45/20 °C	574	731	876	1012	1375
1400	75/65/20 °C	1312	1677	2022	2346	3221
	55/45/20 °C	670	852	1022	1180	1604
1600	75/65/20 °C	1499	1917	2310	2682	3682
	55/45/20 °C	766	974	1168	1349	1833
1800	75/65/20 °C	1687	2156	2599	3017	4142
	55/45/20 °C	861	1096	1314	1517	2063
2000	75/65/20 °C	1874	2396	2888	3352	4602
	55/45/20 °C	957	1218	1460	1686	2292
2300	75/65/20 °C	2155	2755	3321	3855	
	55/45/20 °C	1101	1400	1679	1939	
2600	75/65/20 °C	2436	3115	3754	4358	
	55/45/20 °C	1244	1583	1898	2192	
3000	75/65/20 °C	2811	3594	4332	5028	
	55/45/20 °C	1436	1826	2190	2529	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C exponent n	1178 1.3000	1509 1.3100	1822 1.3197	2119 1.3295	2919 1.3488
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type 33

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FCV 33 600 x 1200 L**



name _____
 type _____
 height _____
 length _____
 L : only for the left side version
 (no letter: standard, i.e. the right side version)



length [mm]	parameters $t_z / t_p / t_i$	height [mm]				
		300	400	500	600	900
400	75/65/20 °C	526	666	798	924	1268
	55/45/20 °C	266	336	400	462	628
500	75/65/20 °C	657	832	997	1155	1586
	55/45/20 °C	333	420	501	577	785
600	75/65/20 °C	788	998	1196	1385	1903
	55/45/20 °C	399	503	601	692	941
700	75/65/20 °C	920	1165	1396	1616	2220
	55/45/20 °C	466	587	701	808	1098
800	75/65/20 °C	1051	1331	1595	1847	2537
	55/45/20 °C	532	671	801	923	1255
900	75/65/20 °C	1183	1498	1795	2078	2854
	55/45/20 °C	599	755	901	1039	1412
1000	75/65/20 °C	1314	1664	1994	2309	3171
	55/45/20 °C	666	839	1001	1154	1569
1100	75/65/20 °C	1445	1830	2193	2540	3488
	55/45/20 °C	732	923	1101	1270	1726
1200	75/65/20 °C	1577	1997	2393	2771	3805
	55/45/20 °C	799	1007	1201	1385	1883
1400	75/65/20 °C	1840	2330	2792	3233	4439
	55/45/20 °C	932	1175	1402	1616	2197
1600	75/65/20 °C	2102	2662	3190	3694	5074
	55/45/20 °C	1065	1343	1602	1847	2511
1800	75/65/20 °C	2365	2995	3589	4156	5708
	55/45/20 °C	1198	1510	1802	2077	2824
2000	75/65/20 °C	2628	3328	3988	4618	6342
	55/45/20 °C	1331	1678	2002	2308	3138
2300	75/65/20 °C	3022	3827	4586	5311	
	55/45/20 °C	1531	1930	2303	2655	
2600	75/65/20 °C	3416	4326	5184	6003	
	55/45/20 °C	1731	2182	2603	3001	
3000	75/65/20 °C	3942	4992	5982	6927	
	55/45/20 °C	1997	2517	3003	3462	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C exponent n	1657 1.3159	2102 1.3250	2525 1.3331	2923 1.3417	4007 1.3612
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PLAN VENTIL COMPACT M (PURMO FCVM)

The PURMO Plan Ventil Contact M panel radiators with mid-bottom connectors stand out due to their completely flat front panel. The panel is glued to the profiled, front base heating panel in a manner concealing any protruding edges, when looking at the radiator from the front. The radiators are equipped with convection fins as well as side covers and a top grille. Two mid-bottom and four side G ½ " threaded female connectors allow for central bottom or side connection. The radiator is also equipped with a built-in thermostatic Oventrop valve insert providing pre-setting.

The main advantage of the central bottom connection relies of the fact that regardless of the length, height and depth of the radiator, the layout of heating system connections can be defined at the building shell stage and it will not change as a result of the selection of a specific size and type of the radiator.

technical specifications

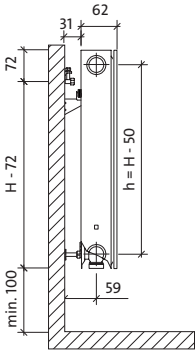
- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 2 x G ½ " mid-bottom connectors,
4 x G ½ " side connectors
- Working pressure : 10 bar • Maximal temperature : 110 °C • Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator : brackets, plugs, air vent.



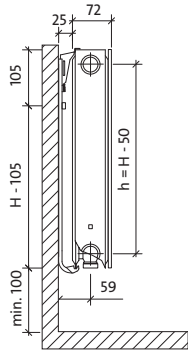
NOTE: the FCVM radiator is available in the right side version only.

side views

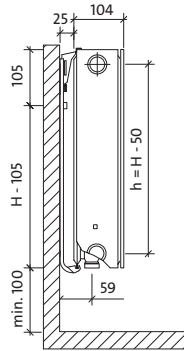
type FCVM 11



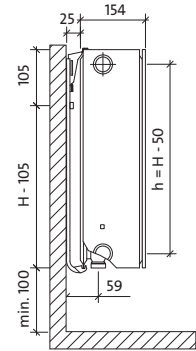
type FCVM 21s



type FCVM 22



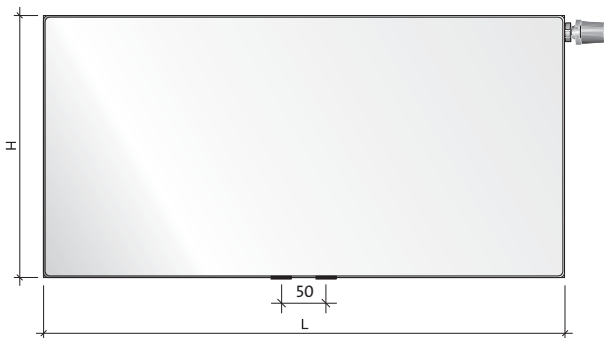
type FCVM 33



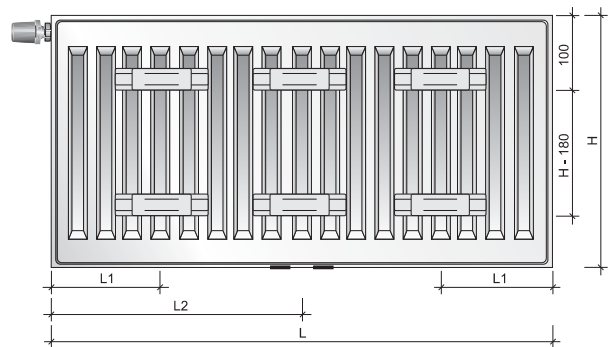
dimensions in mm

H = height
L = length
h = spacing of connectors

front view



rear view - FCVM 11 type only



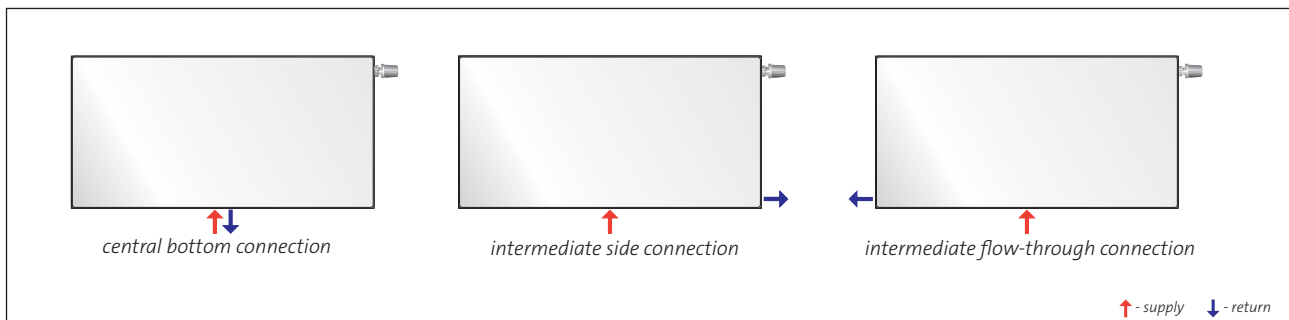
water volume, weight and mounting distances

type	water volume : l/m				
	height	300	500	600	900
11		1.7	2.7	3.2	4.5
21s		3.4	5.5	6.6	9.0
22		3.4	5.5	6.6	9.0
33		5.1	8.2	9.8	13.3

type	weight : kg/m				
	height	300	500	600	900
11		11.7	19.9	24.0	36.2
21s		16.7	27.9	33.5	50.1
22		19.0	32.2	38.8	58.8
33		27.2	46.1	55.5	83.6

type	mounting distances : mm	
	L1	L2
FCVM 11		
400-1600	117	-
1800	117	917
2000	117	1017
2300	117	1150
2600	117	1317
3000	117	1517

recommended connections





RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FCVM 11 600 x 1200**



name _____
type _____
height _____
length _____

NOTE: the FCVM radiator is available in the right side version only.

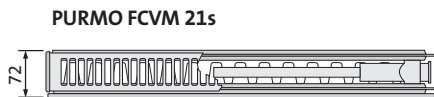
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	212	329	384	539
	55/45/20 °C	109	170	198	275
500	75/65/20 °C	265	412	481	674
	55/45/20 °C	136	212	248	344
600	75/65/20 °C	317	494	577	808
	55/45/20 °C	164	254	297	412
700	75/65/20 °C	370	576	673	943
	55/45/20 °C	191	297	347	481
800	75/65/20 °C	423	658	769	1078
	55/45/20 °C	218	339	396	550
900	75/65/20 °C	476	741	865	1212
	55/45/20 °C	245	382	446	619
1000	75/65/20 °C	529	823	961	1347
	55/45/20 °C	273	424	495	687
1100	75/65/20 °C	582	905	1057	1482
	55/45/20 °C	300	467	545	756
1200	75/65/20 °C	635	988	1153	1616
	55/45/20 °C	327	509	594	825
1400	75/65/20 °C	741	1152	1345	1886
	55/45/20 °C	382	594	693	962
1600	75/65/20 °C	846	1317	1538	2155
	55/45/20 °C	436	679	792	1100
1800	75/65/20 °C	952	1481	1730	2425
	55/45/20 °C	491	763	891	1237
2000	75/65/20 °C	1058	1646	1922	2694
	55/45/20 °C	545	848	990	1375
2300	75/65/20 °C	1217	1893	2210	
	55/45/20 °C	627	975	1139	
2600	75/65/20 °C	1375	2140	2499	
	55/45/20 °C	709	1103	1287	
3000	75/65/20 °C	1587	2469	2883	
	55/45/20 °C	818	1272	1485	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	663	1032	1205	1694
exponent n	1.2820	1.2827	1.2831	1.3013

type 21s

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FCVM 21s 600 x 1200**



name _____
type _____
height _____
length _____

NOTE: the FCVM radiator is available in the right side version only.



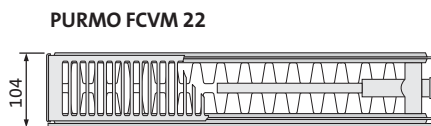
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	293	445	515	706
	55/45/20 °C	151	228	264	354
500	75/65/20 °C	366	557	644	883
	55/45/20 °C	189	286	329	442
600	75/65/20 °C	439	668	773	1059
	55/45/20 °C	227	343	395	531
700	75/65/20 °C	512	779	902	1236
	55/45/20 °C	265	400	461	619
800	75/65/20 °C	586	890	1030	1412
	55/45/20 °C	302	457	527	707
900	75/65/20 °C	659	1002	1159	1589
	55/45/20 °C	340	514	593	796
1000	75/65/20 °C	732	1113	1288	1765
	55/45/20 °C	378	571	659	884
1100	75/65/20 °C	805	1224	1417	1942
	55/45/20 °C	416	628	725	973
1200	75/65/20 °C	878	1336	1546	2118
	55/45/20 °C	454	685	791	1061
1400	75/65/20 °C	1025	1558	1803	2471
	55/45/20 °C	529	800	923	1238
1600	75/65/20 °C	1171	1781	2061	2824
	55/45/20 °C	605	914	1054	1415
1800	75/65/20 °C	1318	2003	2318	3177
	55/45/20 °C	680	1028	1186	1592
2000	75/65/20 °C	1464	2226	2576	3530
	55/45/20 °C	756	1142	1318	1769
2300	75/65/20 °C	1684	2560	2962	
	55/45/20 °C	869	1314	1516	
2600	75/65/20 °C	1903	2894	3349	
	55/45/20 °C	983	1485	1713	
3000	75/65/20 °C	2196	3339	3864	
	55/45/20 °C	1134	1714	1977	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	917	1397	1619	2234
exponent n	1.2786	1.2907	1.2967	1.3371



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FCVM 22 600 x 1200**



name _____
type _____
height _____
length _____

NOTE: the FCVM radiator is available in the right side version only.

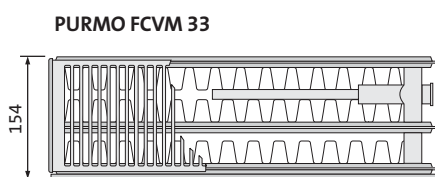
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	375	578	670	920
	55/45/20 °C	191	292	337	458
500	75/65/20 °C	469	722	838	1151
	55/45/20 °C	239	365	422	573
600	75/65/20 °C	562	866	1006	1381
	55/45/20 °C	287	438	506	688
700	75/65/20 °C	656	1011	1173	1611
	55/45/20 °C	335	511	590	802
800	75/65/20 °C	750	1155	1341	1841
	55/45/20 °C	383	584	674	917
900	75/65/20 °C	843	1300	1508	2071
	55/45/20 °C	431	657	759	1031
1000	75/65/20 °C	937	1444	1676	2301
	55/45/20 °C	479	730	843	1146
1100	75/65/20 °C	1031	1588	1844	2531
	55/45/20 °C	526	803	927	1261
1200	75/65/20 °C	1124	1733	2011	2761
	55/45/20 °C	574	876	1012	1375
1400	75/65/20 °C	1312	2022	2346	3221
	55/45/20 °C	670	1022	1180	1604
1600	75/65/20 °C	1499	2310	2682	3682
	55/45/20 °C	766	1168	1349	1833
1800	75/65/20 °C	1687	2599	3017	4142
	55/45/20 °C	861	1314	1517	2063
2000	75/65/20 °C	1874	2888	3352	4602
	55/45/20 °C	957	1460	1686	2292
2300	75/65/20 °C	2155	3321	3855	
	55/45/20 °C	1101	1679	1939	
2600	75/65/20 °C	2436	3754	4358	
	55/45/20 °C	1244	1898	2192	
3000	75/65/20 °C	2811	4332	5028	
	55/45/20 °C	1436	2190	2529	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1178	1822	2119	2919
exponent n	1.3000	1.3197	1.3295	1.3488

type 33

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FCVM 33 600 x 1200**



NOTE: the FCVM radiator is available in the right side version only.



length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	526	798	924	1268
	55/45/20 °C	266	400	462	628
500	75/65/20 °C	657	997	1155	1586
	55/45/20 °C	333	501	577	785
600	75/65/20 °C	788	1196	1385	1903
	55/45/20 °C	399	601	692	941
700	75/65/20 °C	920	1396	1616	2220
	55/45/20 °C	466	701	808	1098
800	75/65/20 °C	1051	1595	1847	2537
	55/45/20 °C	532	801	923	1255
900	75/65/20 °C	1183	1795	2078	2854
	55/45/20 °C	599	901	1039	1412
1000	75/65/20 °C	1314	1994	2309	3171
	55/45/20 °C	666	1001	1154	1569
1100	75/65/20 °C	1445	2193	2540	3488
	55/45/20 °C	732	1101	1270	1726
1200	75/65/20 °C	1577	2393	2771	3805
	55/45/20 °C	799	1201	1385	1883
1400	75/65/20 °C	1840	2792	3233	4439
	55/45/20 °C	932	1402	1616	2197
1600	75/65/20 °C	2102	3190	3694	5074
	55/45/20 °C	1065	1602	1847	2511
1800	75/65/20 °C	2365	3589	4156	5708
	55/45/20 °C	1198	1802	2077	2824
2000	75/65/20 °C	2628	3988	4618	6342
	55/45/20 °C	1331	2002	2308	3138
2300	75/65/20 °C	3022	4586	5311	
	55/45/20 °C	1531	2303	2655	
2600	75/65/20 °C	3416	5184	6003	
	55/45/20 °C	1731	2603	3001	
3000	75/65/20 °C	3942	5982	6927	
	55/45/20 °C	1997	3003	3462	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1657	2525	2923	4007
exponent n	1.3159	1.3331	1.3417	1.3612



PLAN HYGIENE (PURMO FH)

The PURMO Plan Hygiene panel radiators are characterized by a completely flat front panel. The panel is glued to the profiled, front base heating panel in a manner concealing any protruding edges, when looking at the radiator from the front. Due to the absence of side covers and a top grille, they are intended for applications in health care and other facilities of elevated hygienic requirements. Four side G ½ " threaded female connectors allow for side connection on both right and left side.

technical specifications

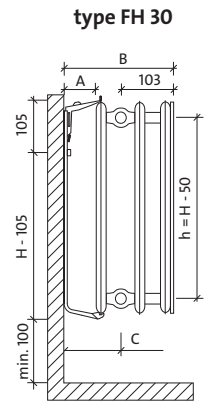
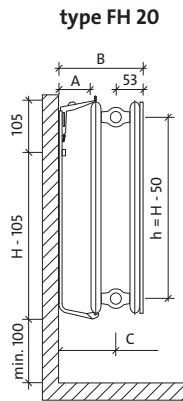
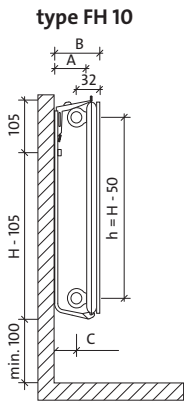
- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 4 x G ½ " side connectors
- Working pressure : 10 bar
- Maximal temperature : 110 °C
- Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator: plug, air vent.

NOTE:

Mounting brackets must be ordered separately. For the method of selecting and ordering see page 60



side views



dimensions in mm

H = height
L = length
h = spacing of connectors

front view



mounting distances : mm

type	FH 10	FH 20	FH 30
radiator depth	49	104	154
A-mounting depth	100	100	100
B-total depth	116	204	254
C-connection axis	84	151	151

water volume and weight

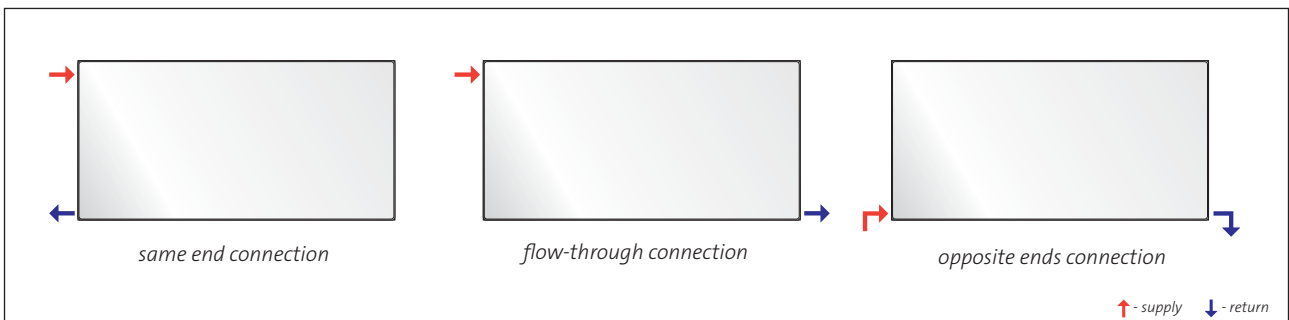
water volume : l/m

type \ height	300	500	600	900
10	1.7	2.7	3.2	4.5
20	3.4	5.5	6.6	9.0
30	5.1	8.2	9.8	13.3

weight : kg/m

type \ height	300	500	600	900
10	5.9	9.8	11.7	17.2
20	11.8	19.5	23.4	34.1
30	17.6	29.2	35.0	51.0

recommended connections

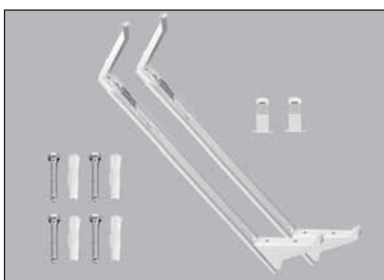


Required quantities of the Monclac MCK 108 hospital brackets for various types and heights of the PURMO hygienic radiators.

Brackets of outreach 108 mm – max. vertical load of 125 kg per single bracket.
(new brackets with reinforced foot structure)

NOTE: Mounting brackets for hygienic radiators must be ordered separately. Mounting brackets are packed in sets of 2 or 3 pieces. In the table, there are presented quantities of single mounting brackets, not sets!!!

height	300			450			500			600			900		
length [mm]	10	20	30	10	20	30	10	20	30	10	20	30	10	20	30
	quantity			quantity			quantity			quantity			quantity		
400	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
500	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
600	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
700	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
800	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
900	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1000	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
1100	2	2	3	2	2	2	2	2	2	2	2	2	2	2	3
1200	2	2	3	2	2	3	2	2	3	2	2	2	2	2	3
1400	2	3	3	2	2	3	2	2	3	2	2	3	2	3	3
1600	3	3	3	2	3	3	2	3	3	2	2	3	3	3	3
1800	3	3	4	3	3	3	3	3	3	2	3	3	3	3	4
2000	3	3	4	3	3	4	3	3	4	3	3	3	3	3	4
2300	4	4	4	3	3	4	3	3	4	3	3	4	3	4	4
2600	4	4	5	4	4	4	4	4	5	3	3	4	4	4	5
3000	5	5	6	4	4	5	4	4	5	4	4	5	4	4	5



Rules for selecting sets of the Monclac MCK 108 mounting brackets, using the example of the type 20 hygienic radiator of 600 mm height:

- 1) For the length of 1000 mm - 1 double set AZ02BW2MC601080R9016
- 2) For the length of 2000 mm - 1 triple set AZ02BW3MC601080R9016
- 3) For the length of 3000 mm - 2 double sets AZ02BW2MC601080R9016

description	order code
2-element Monclac MCK-108 set for radiators of 300 mm height	AZ02BW2MC301080R9016
3-element Monclac MCK-108 set for radiators of 300 mm height	AZ02BW3MC301080R9016
2-element Monclac MCK-108 set for radiators of 450 mm height	AZ02BW2MC451080R9016
3-element Monclac MCK-108 set for radiators of 450 mm height	AZ02BW3MC451080R9016
2-element Monclac MCK-108 set for radiators of 500 mm height	AZ02BW2MC501080R9016
3-element Monclac MCK-108 set for radiators of 500 mm height	AZ02BW3MC501080R9016
2-element Monclac MCK-108 set for radiators of 600 mm height	AZ02BW2MC601080R9016
3-element Monclac MCK-108 set for radiators of 600 mm height	AZ02BW3MC601080R9016
2-element Monclac MCK-108 set for radiators of 900 mm height	AZ02BW2MC901080R9016
3-element Monclac MCK-108 set for radiators of 900 mm height	AZ02BW3MC901080R9016

type 10

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FH 10 600 x 1200**



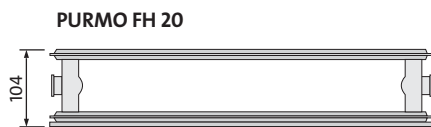
name
type
height
length



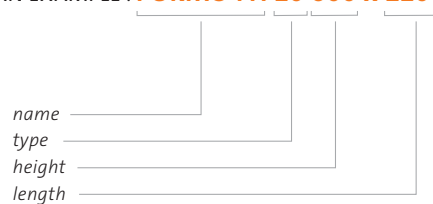
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	125	202	237	328
	55/45/20 °C	64	104	123	170
500	75/65/20 °C	157	253	296	410
	55/45/20 °C	80	130	154	212
600	75/65/20 °C	188	303	355	492
	55/45/20 °C	96	156	185	254
700	75/65/20 °C	219	354	414	574
	55/45/20 °C	111	183	216	297
800	75/65/20 °C	250	404	474	656
	55/45/20 °C	127	209	246	339
900	75/65/20 °C	282	455	533	738
	55/45/20 °C	143	235	277	381
1000	75/65/20 °C	313	505	592	820
	55/45/20 °C	159	261	308	424
1100	75/65/20 °C	344	556	651	902
	55/45/20 °C	175	287	339	466
1200	75/65/20 °C	376	606	710	984
	55/45/20 °C	191	313	369	509
1400	75/65/20 °C	438	707	829	1148
	55/45/20 °C	223	365	431	593
1600	75/65/20 °C	501	808	947	1312
	55/45/20 °C	255	417	493	678
1800	75/65/20 °C	563	909	1066	1476
	55/45/20 °C	287	469	554	763
2000	75/65/20 °C	626	1010	1184	1640
	55/45/20 °C	319	521	616	848
2300	75/65/20 °C	720	1162	1362	
	55/45/20 °C	366	600	708	
2600	75/65/20 °C	814	1313	1539	
	55/45/20 °C	414	678	801	
3000	75/65/20 °C	939	1515	1776	
	55/45/20 °C	478	782	924	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C exponent n	394 1.3073	633 1.2790	740 1.2648	1 027 1.2769
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RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FH 20 600 x 1200**



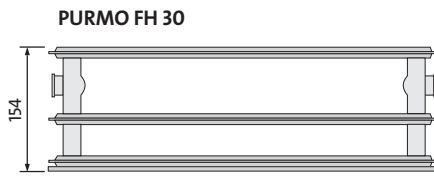
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	239	352	406	564
	55/45/20 °C	124	182	209	292
500	75/65/20 °C	299	440	508	706
	55/45/20 °C	155	227	261	365
600	75/65/20 °C	359	528	609	847
	55/45/20 °C	186	272	313	438
700	75/65/20 °C	419	616	711	988
	55/45/20 °C	217	318	365	512
800	75/65/20 °C	478	704	812	1129
	55/45/20 °C	248	363	418	585
900	75/65/20 °C	538	792	914	1270
	55/45/20 °C	279	409	470	658
1000	75/65/20 °C	598	880	1015	1411
	55/45/20 °C	310	454	522	731
1100	75/65/20 °C	658	968	1117	1552
	55/45/20 °C	341	499	574	804
1200	75/65/20 °C	718	1056	1218	1693
	55/45/20 °C	372	545	627	877
1400	75/65/20 °C	837	1232	1421	1975
	55/45/20 °C	434	635	731	1023
1600	75/65/20 °C	957	1408	1624	2258
	55/45/20 °C	496	726	835	1169
1800	75/65/20 °C	1076	1584	1827	2540
	55/45/20 °C	558	817	940	1315
2000	75/65/20 °C	1196	1760	2030	2822
	55/45/20 °C	620	908	1044	1462
2300	75/65/20 °C	1375	2024	2335	
	55/45/20 °C	713	1044	1201	
2600	75/65/20 °C	1555	2288	2639	
	55/45/20 °C	806	1180	1358	
3000	75/65/20 °C	1794	2640	3045	
	55/45/20 °C	930	1362	1566	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	748	1 103	1 273	1 766
exponent n	1.2706	1.2809	1.2861	1.2729

type 30

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FH 30 600 x 1200**



length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	334	488	560	771
	55/45/20 °C	171	249	285	391
500	75/65/20 °C	417	610	700	964
	55/45/20 °C	214	311	356	488
600	75/65/20 °C	500	731	840	1156
	55/45/20 °C	257	373	427	586
700	75/65/20 °C	584	853	980	1349
	55/45/20 °C	299	435	499	683
800	75/65/20 °C	667	975	1120	1542
	55/45/20 °C	342	497	570	781
900	75/65/20 °C	751	1097	1260	1734
	55/45/20 °C	385	560	641	879
1000	75/65/20 °C	834	1219	1400	1927
	55/45/20 °C	428	622	712	976
1100	75/65/20 °C	917	1341	1540	2120
	55/45/20 °C	470	684	784	1074
1200	75/65/20 °C	1001	1463	1680	2312
	55/45/20 °C	513	746	855	1172
1400	75/65/20 °C	1168	1707	1960	2698
	55/45/20 °C	599	871	997	1367
1600	75/65/20 °C	1334	1950	2240	3083
	55/45/20 °C	684	995	1140	1562
1800	75/65/20 °C	1501	2194	2520	3469
	55/45/20 °C	770	1119	1282	1758
2000	75/65/20 °C	1668	2438	2800	3854
	55/45/20 °C	855	1244	1425	1953
2300	75/65/20 °C	1918	2804	3220	
	55/45/20 °C	983	1430	1638	
2600	75/65/20 °C	2168	3169	3640	
	55/45/20 °C	1112	1617	1852	
3000	75/65/20 °C	2502	3657	4200	
	55/45/20 °C	1283	1866	2137	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1 047	1 534	1 763	2 430
exponent n	1.2926	1.3023	1.3072	1.3135



PLAN VENTIL HYGIENE (PURMO FHV)

The PURMO Plan Ventil Hygiene panel radiators are characterized by a completely flat front panel. The panel is glued to the profiled, front base heating panel in a manner concealing any protruding edges, when looking at the radiator from the front. Due to the absence of side covers and a top grille, they are intended for applications in health care and other facilities of elevated hygienic requirements. Two bottom and four side G ½ " threaded female connectors allow for bottom or side connection. The radiator is also equipped with a built-in thermostatic Oventrop valve insert providing pre-setting.

technical specifications

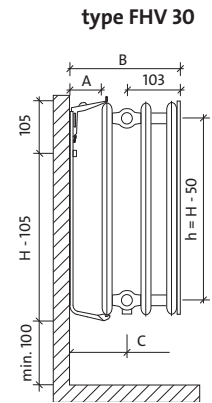
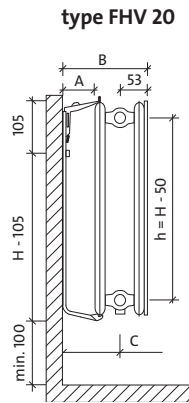
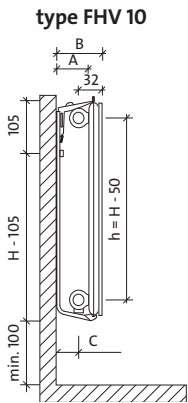
- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 2 x G ½ " bottom, right side connectors (left side - available on request), 4 x G ½ " side connectors
- Working pressure : 10 bar
- Maximal temperature : 110 °C
- Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator : plugs, air vent.

NOTE:

Mounting brackets must be ordered separately. For the method of selecting and ordering see page 66



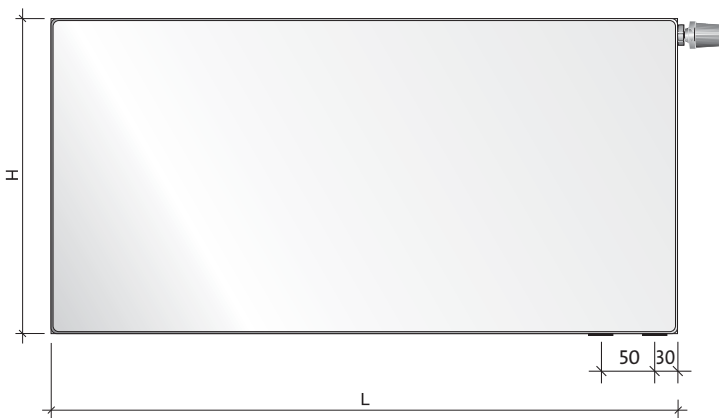
side views



dimensions in mm

H = height
L = length
h = spacing of connectors

front view



mounting distances : mm

type	FHV 10	FHV 20	FHV 30
radiator depth	49	104	154
A-mounting depth	100	100	100
B-total depth	116	204	254
C-connection axis	84	151	151

water volume and weight

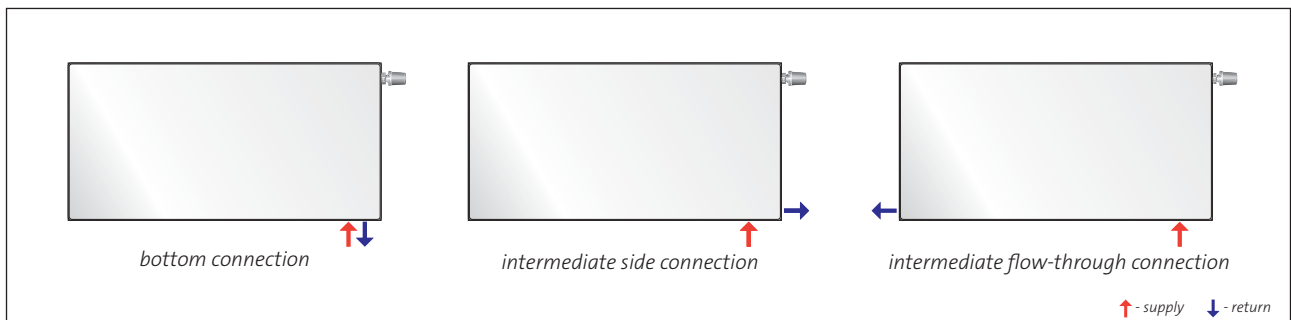
water volume : l/m

type \ height	300	500	600	900
10	1.7	2.7	3.2	4.5
20	3.4	5.5	6.6	9.0
30	5.1	8.2	9.8	13.3

weight : kg/m

type \ height	300	500	600	900
10	5.9	9.8	11.7	17.2
20	11.8	19.5	23.4	34.1
30	17.6	29.2	35.0	51.0

recommended connections



↑ - supply ↓ - return

Required quantities of the Monclac MCK 108 hospital brackets for various types and heights of the PURMO hygienic radiators.

Brackets of outreach 108 mm – max. vertical load of 125 kg per single bracket.
(new brackets with reinforced foot structure)

NOTE: Mounting brackets for hygienic radiators must be ordered separately. Mounting brackets are packed in sets of 2 or 3 pieces. In the table, there are presented quantities of single mounting brackets, not sets!!!

height	300			450			500			600			900		
length [mm]	10	20	30	10	20	30	10	20	30	10	20	30	10	20	30
	quantity			quantity			quantity			quantity			quantity		
400	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
500	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
600	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
700	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
800	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
900	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1000	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
1100	2	2	3	2	2	2	2	2	2	2	2	2	2	2	3
1200	2	2	3	2	2	3	2	2	3	2	2	2	2	2	3
1400	2	3	3	2	2	3	2	2	3	2	2	3	2	3	3
1600	3	3	3	2	3	3	2	3	3	2	2	3	3	3	3
1800	3	3	4	3	3	3	3	3	3	2	3	3	3	3	4
2000	3	3	4	3	3	4	3	3	4	3	3	3	3	3	4
2300	4	4	4	3	3	4	3	3	4	3	3	4	3	4	4
2600	4	4	5	4	4	4	4	4	5	3	3	4	4	4	5
3000	5	5	6	4	4	5	4	4	5	4	4	5	4	4	5



Rules for selecting sets of the Monclac MCK 108 mounting brackets, using the example of the type 20 hygienic radiator of 600 mm height:

- 1) For the length of 1000 mm - 1 double set AZ02BW2MC601080R9016
- 2) For the length of 2000 mm - 1 triple set AZ02BW3MC601080R9016
- 3) For the length of 3000 mm - 2 double sets AZ02BW2MC601080R9016

description	order code
2-element Monclac MCK-108 set for radiators of 300 mm height	AZ02BW2MC301080R9016
3-element Monclac MCK-108 set for radiators of 300 mm height	AZ02BW3MC301080R9016
2-element Monclac MCK-108 set for radiators of 450 mm height	AZ02BW2MC451080R9016
3-element Monclac MCK-108 set for radiators of 450 mm height	AZ02BW3MC451080R9016
2-element Monclac MCK-108 set for radiators of 500 mm height	AZ02BW2MC501080R9016
3-element Monclac MCK-108 set for radiators of 500 mm height	AZ02BW3MC501080R9016
2-element Monclac MCK-108 set for radiators of 600 mm height	AZ02BW2MC601080R9016
3-element Monclac MCK-108 set for radiators of 600 mm height	AZ02BW3MC601080R9016
2-element Monclac MCK-108 set for radiators of 900 mm height	AZ02BW2MC901080R9016
3-element Monclac MCK-108 set for radiators of 900 mm height	AZ02BW3MC901080R9016

type 10

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FHV 10 600 x 1200 L**

PURMO FHV 10



name
type
height
length
L : only for the left side version
(no letter: standard, i.e. the right side version)



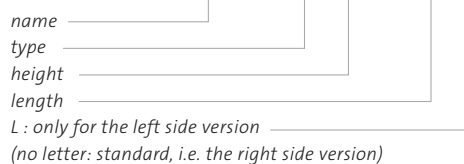
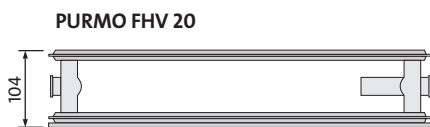
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	125	202	237	328
	55/45/20 °C	64	104	123	170
500	75/65/20 °C	157	253	296	410
	55/45/20 °C	80	130	154	212
600	75/65/20 °C	188	303	355	492
	55/45/20 °C	96	156	185	254
700	75/65/20 °C	219	354	414	574
	55/45/20 °C	111	183	216	297
800	75/65/20 °C	250	404	474	656
	55/45/20 °C	127	209	246	339
900	75/65/20 °C	282	455	533	738
	55/45/20 °C	143	235	277	381
1000	75/65/20 °C	313	505	592	820
	55/45/20 °C	159	261	308	424
1100	75/65/20 °C	344	556	651	902
	55/45/20 °C	175	287	339	466
1200	75/65/20 °C	376	606	710	984
	55/45/20 °C	191	313	369	509
1400	75/65/20 °C	438	707	829	1148
	55/45/20 °C	223	365	431	593
1600	75/65/20 °C	501	808	947	1312
	55/45/20 °C	255	417	493	678
1800	75/65/20 °C	563	909	1066	1476
	55/45/20 °C	287	469	554	763
2000	75/65/20 °C	626	1010	1184	1640
	55/45/20 °C	319	521	616	848
2300	75/65/20 °C	720	1162	1362	
	55/45/20 °C	366	600	708	
2600	75/65/20 °C	814	1313	1539	
	55/45/20 °C	414	678	801	
3000	75/65/20 °C	939	1515	1776	
	55/45/20 °C	478	782	924	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	394	633	740	1 027
exponent n	1.3073	1.2790	1.2648	1.2769



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FHV 20 600 x 1200 L**



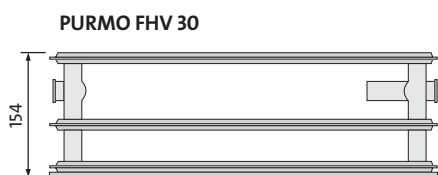
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	239	352	406	564
	55/45/20 °C	124	182	209	292
500	75/65/20 °C	299	440	508	706
	55/45/20 °C	155	227	261	365
600	75/65/20 °C	359	528	609	847
	55/45/20 °C	186	272	313	438
700	75/65/20 °C	419	616	711	988
	55/45/20 °C	217	318	365	512
800	75/65/20 °C	478	704	812	1129
	55/45/20 °C	248	363	418	585
900	75/65/20 °C	538	792	914	1270
	55/45/20 °C	279	409	470	658
1000	75/65/20 °C	598	880	1015	1411
	55/45/20 °C	310	454	522	731
1100	75/65/20 °C	658	968	1117	1552
	55/45/20 °C	341	499	574	804
1200	75/65/20 °C	718	1056	1218	1693
	55/45/20 °C	372	545	627	877
1400	75/65/20 °C	837	1232	1421	1975
	55/45/20 °C	434	635	731	1023
1600	75/65/20 °C	957	1408	1624	2258
	55/45/20 °C	496	726	835	1169
1800	75/65/20 °C	1076	1584	1827	2540
	55/45/20 °C	558	817	940	1315
2000	75/65/20 °C	1196	1760	2030	2822
	55/45/20 °C	620	908	1044	1462
2300	75/65/20 °C	1375	2024	2335	
	55/45/20 °C	713	1044	1201	
2600	75/65/20 °C	1555	2288	2639	
	55/45/20 °C	806	1180	1358	
3000	75/65/20 °C	1794	2640	3045	
	55/45/20 °C	930	1362	1566	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C exponent n	748 1.2706	1 103 1.2809	1 273 1.2861	1 766 1.2729
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type 30

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FHV 30 600 x 1200 L**



name _____
 type _____
 height _____
 length _____
 L : only for the left side version
 (no letter: standard, i.e. the right side version)



length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	334	488	560	771
	55/45/20 °C	171	249	285	391
500	75/65/20 °C	417	610	700	964
	55/45/20 °C	214	311	356	488
600	75/65/20 °C	500	731	840	1156
	55/45/20 °C	257	373	427	586
700	75/65/20 °C	584	853	980	1349
	55/45/20 °C	299	435	499	683
800	75/65/20 °C	667	975	1120	1542
	55/45/20 °C	342	497	570	781
900	75/65/20 °C	751	1097	1260	1734
	55/45/20 °C	385	560	641	879
1000	75/65/20 °C	834	1219	1400	1927
	55/45/20 °C	428	622	712	976
1100	75/65/20 °C	917	1341	1540	2120
	55/45/20 °C	470	684	784	1074
1200	75/65/20 °C	1001	1463	1680	2312
	55/45/20 °C	513	746	855	1172
1400	75/65/20 °C	1168	1707	1960	2698
	55/45/20 °C	599	871	997	1367
1600	75/65/20 °C	1334	1950	2240	3083
	55/45/20 °C	684	995	1140	1562
1800	75/65/20 °C	1501	2194	2520	3469
	55/45/20 °C	770	1119	1282	1758
2000	75/65/20 °C	1668	2438	2800	3854
	55/45/20 °C	855	1244	1425	1953
2300	75/65/20 °C	1918	2804	3220	
	55/45/20 °C	983	1430	1638	
2600	75/65/20 °C	2168	3169	3640	
	55/45/20 °C	1112	1617	1852	
3000	75/65/20 °C	2502	3657	4200	
	55/45/20 °C	1283	1866	2137	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1 047	1 534	1 763	2 430
exponent n	1.2926	1.3023	1.3072	1.3135



RAMO COMPACT (PURMO RC)

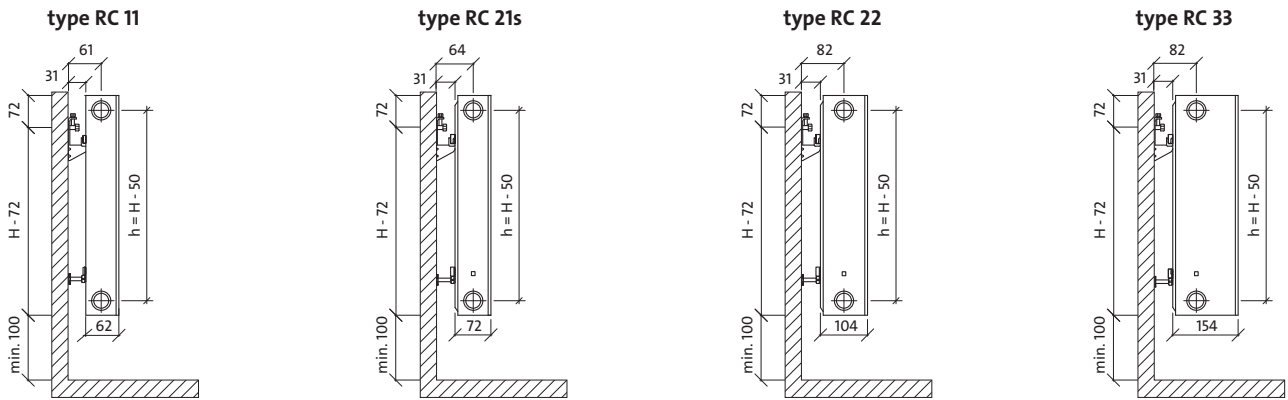
The PURMO Ramo Contact panel radiators with side connectors stand out due to their flat front panel with slight horizontal ribbing. The panel is glued to the profiled, front base heating panel in a manner concealing any protruding edges, when looking at the radiator from the front. The radiators are equipped with side covers and a top grille. Four side G ½ " threaded female connectors allow for side connection on both right and left side.

technical specifications

- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 4 x G ½ " side connectors
- Working pressure : 10 bar
- Maximal temperature : 110 °C
- Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator : brackets, plug, air vent.



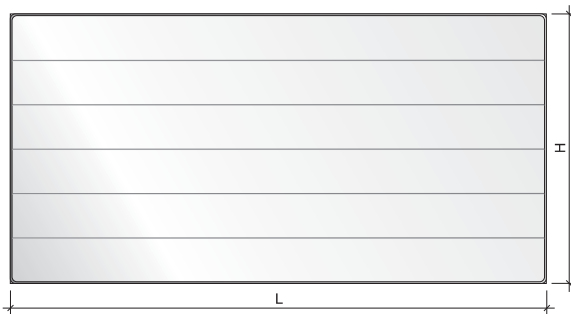
side views



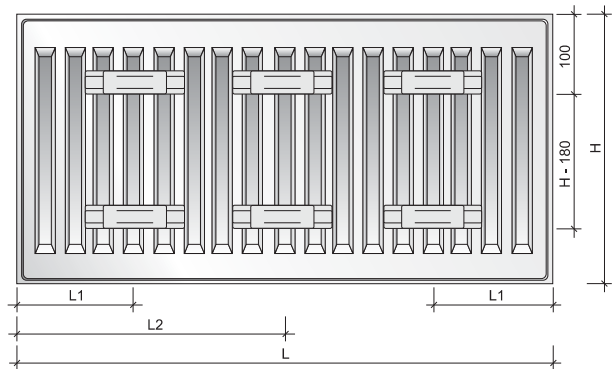
dimensions in mm

H = height
L = length
h = spacing of connectors

front view



rear view



water volume, weight and mounting distances

water volume : l/m

height type	300	400	500	600	900
11	1.7	2.2	2.7	3.2	4.5
21s	3.4	4.5	5.5	6.6	9.0
22	3.4	4.5	5.5	6.6	9.0
33	5.1	6.7	8.2	9.8	13.3

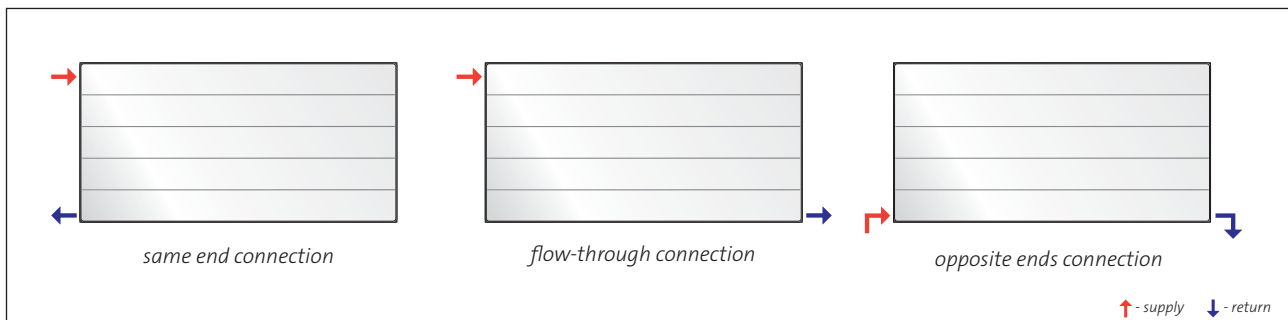
weight : kg/m

height type	300	400	500	600	900
11	11.7	15.8	19.9	24.0	36.2
21s	16.7	22.3	27.9	33.5	50.1
22	19.0	25.6	32.2	38.8	58.8
33	27.2	36.6	46.1	55.5	83.6

mounting distances : mm

type	RC 11	RC 21s, RC 22, RC 33		
L	L1	L2	L1	L2
400-1600	117	-	133	-
1800	117	917	133	900
2000	117	1017	133	1000
2300	117	1150	133	1150
2600	117	1317	133	1300
3000	117	1517	133	1500

recommended connections





RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RC 11 600 x 1200**



length [mm]	parameters $t_z / t_p / t_i$	height [mm]				
		300	400	500	600	900
400	75/65/20 °C	212	272	329	384	539
	55/45/20 °C	109	140	170	198	275
500	75/65/20 °C	265	340	412	481	674
	55/45/20 °C	136	175	212	248	344
600	75/65/20 °C	317	408	494	577	808
	55/45/20 °C	164	210	254	297	412
700	75/65/20 °C 55/45/20 °C					
800	75/65/20 °C	423	544	658	769	1078
	55/45/20 °C	218	280	339	396	550
900	75/65/20 °C 55/45/20 °C					
1000	75/65/20 °C	529	680	823	961	1347
	55/45/20 °C	273	350	424	495	687
1100	75/65/20 °C 55/45/20 °C					
1200	75/65/20 °C	635	816	988	1153	1616
	55/45/20 °C	327	421	509	594	825
1400	75/65/20 °C	741	952	1152	1345	1886
	55/45/20 °C	382	491	594	693	962
1600	75/65/20 °C	846	1088	1317	1538	2155
	55/45/20 °C	436	561	679	792	1100
1800	75/65/20 °C	952	1224	1481	1730	2425
	55/45/20 °C	491	631	763	891	1237
2000	75/65/20 °C	1058	1360	1646	1922	2694
	55/45/20 °C	545	701	848	990	1375
2300	75/65/20 °C	1217	1564	1893	2210	
	55/45/20 °C	627	806	975	1139	
2600	75/65/20 °C	1375	1768	2140	2499	
	55/45/20 °C	709	911	1103	1287	
3000	75/65/20 °C	1587	2040	2469	2883	
	55/45/20 °C	818	1051	1272	1485	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	663	852	1032	1205	1694
exponent n	1.2820	1.2820	1.2827	1.2831	1.3013

type 21s

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RC 21s 600 x 1200**



length [mm]	parameters $t_z / t_p / t_i$	height [mm]				
		300	400	500	600	900
400	75/65/20 °C	293	372	445	515	706
	55/45/20 °C	151	191	228	264	354
500	75/65/20 °C	366	465	557	644	883
	55/45/20 °C	189	239	286	329	442
600	75/65/20 °C	439	557	668	773	1059
	55/45/20 °C	227	287	343	395	531
700	75/65/20 °C 55/45/20 °C					
800	75/65/20 °C	586	743	890	1030	1412
	55/45/20 °C	302	383	457	527	707
900	75/65/20 °C 55/45/20 °C					
1000	75/65/20 °C	732	929	1113	1288	1765
	55/45/20 °C	378	478	571	659	884
1100	75/65/20 °C 55/45/20 °C					
1200	75/65/20 °C	878	1115	1336	1546	2118
	55/45/20 °C	454	574	685	791	1061
1400	75/65/20 °C	1025	1301	1558	1803	2471
	55/45/20 °C	529	670	800	923	1238
1600	75/65/20 °C	1171	1486	1781	2061	2824
	55/45/20 °C	605	765	914	1054	1415
1800	75/65/20 °C	1318	1672	2003	2318	3177
	55/45/20 °C	680	861	1028	1186	1592
2000	75/65/20 °C	1464	1858	2226	2576	3530
	55/45/20 °C	756	957	1142	1318	1769
2300	75/65/20 °C	1684	2137	2560	2962	
	55/45/20 °C	869	1100	1314	1516	
2600	75/65/20 °C	1903	2415	2894	3349	
	55/45/20 °C	983	1243	1485	1713	
3000	75/65/20 °C	2196	2787	3339	3864	
	55/45/20 °C	1134	1435	1714	1977	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	917	1165	1397	1619	2234
exponent n	1.2786	1.2850	1.2907	1.2967	1.3371



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RC 22 600 x 1200**

name _____
type _____
height _____
length _____

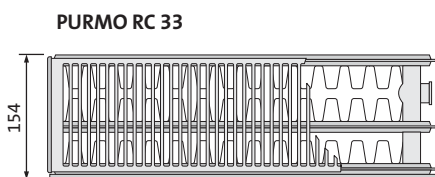
length [mm]	parameters $t_z / t_p / t_i$	height [mm]				
		300	400	500	600	900
400	75/65/20 °C	375	479	578	670	920
	55/45/20 °C	191	244	292	337	458
500	75/65/20 °C	469	599	722	838	1151
	55/45/20 °C	239	304	365	422	573
600	75/65/20 °C	562	719	866	1006	1381
	55/45/20 °C	287	365	438	506	688
700	75/65/20 °C 55/45/20 °C					
800	75/65/20 °C	750	958	1155	1341	1841
	55/45/20 °C	383	487	584	674	917
900	75/65/20 °C 55/45/20 °C					
1000	75/65/20 °C	937	1198	1444	1676	2301
	55/45/20 °C	479	609	730	843	1146
1100	75/65/20 °C 55/45/20 °C					
1200	75/65/20 °C	1124	1438	1733	2011	2761
	55/45/20 °C	574	731	876	1012	1375
1400	75/65/20 °C	1312	1677	2022	2346	3221
	55/45/20 °C	670	852	1022	1180	1604
1600	75/65/20 °C	1499	1917	2310	2682	3682
	55/45/20 °C	766	974	1168	1349	1833
1800	75/65/20 °C	1687	2156	2599	3017	4142
	55/45/20 °C	861	1096	1314	1517	2063
2000	75/65/20 °C	1874	2396	2888	3352	4602
	55/45/20 °C	957	1218	1460	1686	2292
2300	75/65/20 °C	2155	2755	3321	3855	
	55/45/20 °C	1101	1400	1679	1939	
2600	75/65/20 °C	2436	3115	3754	4358	
	55/45/20 °C	1244	1583	1898	2192	
3000	75/65/20 °C	2811	3594	4332	5028	
	55/45/20 °C	1436	1826	2190	2529	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1178	1509	1822	2119	2919
exponent n	1.3000	1.3100	1.3197	1.3295	1.3488

type 33

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RC 33 600 x 1200**



name _____
type _____
height _____
length _____



length [mm]	parameters $t_z / t_p / t_i$	height [mm]				
		300	400	500	600	900
400	75/65/20 °C	526	666	798	924	1268
	55/45/20 °C	266	336	400	462	628
500	75/65/20 °C	657	832	997	1155	1586
	55/45/20 °C	333	420	501	577	785
600	75/65/20 °C	788	998	1196	1385	1903
	55/45/20 °C	399	503	601	692	941
700	75/65/20 °C					
800	75/65/20 °C	1051	1331	1595	1847	2537
	55/45/20 °C	532	671	801	923	1255
900	75/65/20 °C					
1000	75/65/20 °C	1314	1664	1994	2309	3171
	55/45/20 °C	666	839	1001	1154	1569
1100	75/65/20 °C					
1200	75/65/20 °C	1577	1997	2393	2771	3805
	55/45/20 °C	799	1007	1201	1385	1883
1400	75/65/20 °C	1840	2330	2792	3233	4439
	55/45/20 °C	932	1175	1402	1616	2197
1600	75/65/20 °C	2102	2662	3190	3694	5074
	55/45/20 °C	1065	1343	1602	1847	2511
1800	75/65/20 °C	2365	2995	3589	4156	5708
	55/45/20 °C	1198	1510	1802	2077	2824
2000	75/65/20 °C	2628	3328	3988	4618	6342
	55/45/20 °C	1331	1678	2002	2308	3138
2300	75/65/20 °C	3022	3827	4586	5311	
	55/45/20 °C	1531	1930	2303	2655	
2600	75/65/20 °C	3416	4326	5184	6003	
	55/45/20 °C	1731	2182	2603	3001	
3000	75/65/20 °C	3942	4992	5982	6927	
	55/45/20 °C	1997	2517	3003	3462	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1657	2102	2525	2923	4007
exponent n	1.3159	1.3250	1.3331	1.3417	1.3612



RAMO VENTIL COMPACT (PURMO RCV)

The versatile PURMO Ramo Ventil Contact panel radiators stand out due to their flat front panel with slight horizontal ribbing. The panel is glued to the profiled, front base heating panel in a manner concealing any protruding edges, when looking at the radiator from the front. The radiators are equipped with convection fins as well as side covers and a top grille. Two bottom and four side G ½ " threaded female connectors allow for bottom or side connection. The radiator is also equipped with a built-in thermostatic Oventrop valve insert providing pre-setting.

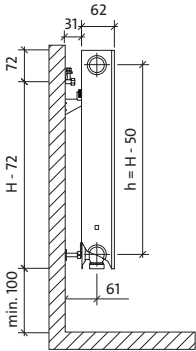
technical specifications

- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 2 x G ½ " bottom, right side connectors (left side - available on request)
4 x G ½ " side connectors
- Working pressure : 10 bar
- Maximal temperature : 110 °C
- Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator : brackets, plugs, air vent.

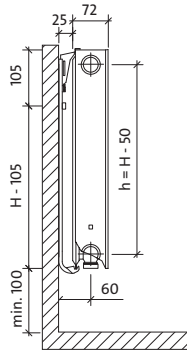


side views

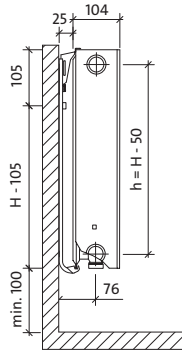
type RCV 11



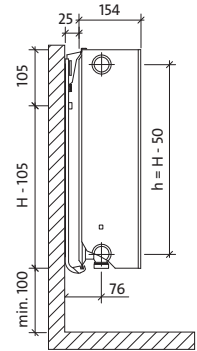
type RCV 21 s



type RCV 22



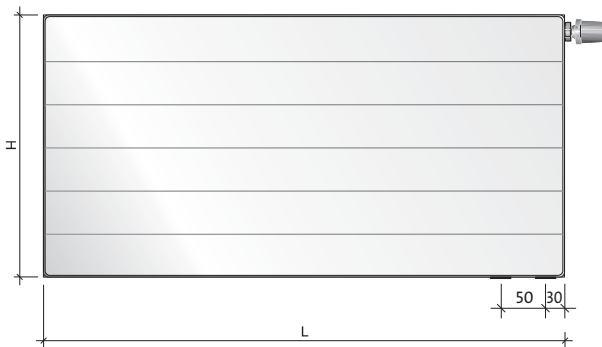
type RCV 33



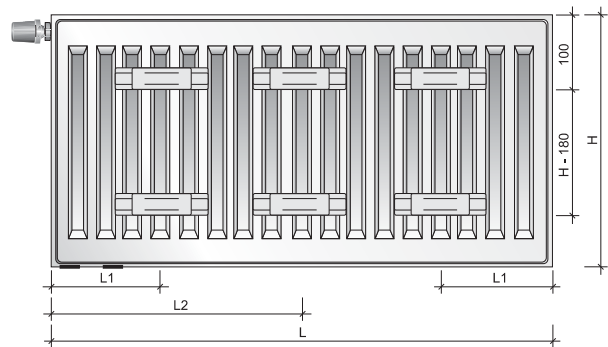
dimensions in mm

H = height
 L = length
 h = spacing of connectors

front view



rear view - RCV 11 type only



water volume, weight and mounting distances

water volume : l/m

height type	300	400	500	600	900
11	1.7	2.2	2.7	3.2	4.5
21s	3.4	4.5	5.5	6.6	9.0
22	3.4	4.5	5.5	6.6	9.0
33	5.1	6.7	8.2	9.8	13.3

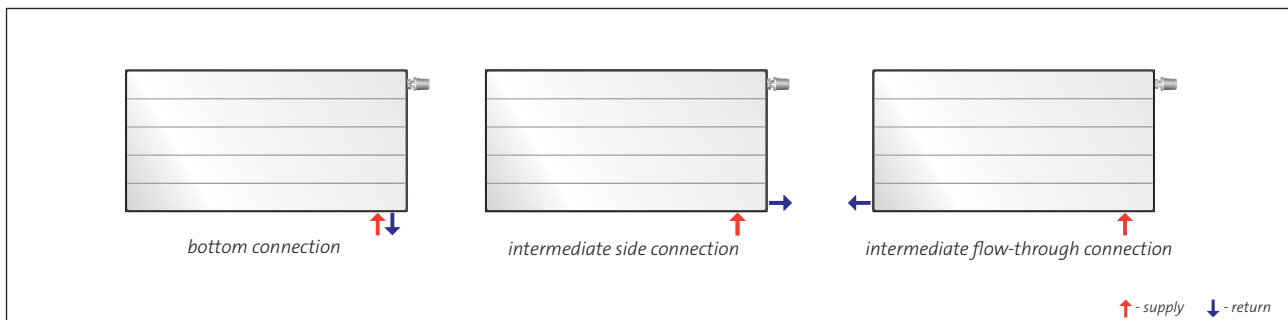
weight : kg/m

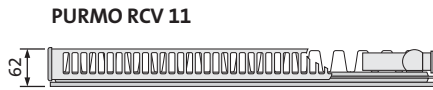
height type	300	400	500	600	900
11	11.7	15.8	19.9	24.0	36.2
21s	16.7	22.3	27.9	33.5	50.1
22	19.0	25.6	32.2	38.8	58.8
33	27.2	36.6	46.1	55.5	83.6

mounting distances : mm

type	RCV 11	
	L	L1 L2
400-1600	117	-
1800	117	917
2000	117	1017
2300	117	1150
2600	117	1317
3000	117	1517

recommended connections





RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RCV 11 600 x 1200 L**

name _____
 type _____
 height _____
 length _____
 L : only for the left side version
 (no letter: standard, i.e. the right side version)

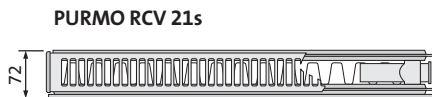
length [mm]	parameters $t_z / t_p / t_i$	height [mm]				
		300	400	500	600	900
400	75/65/20 °C	212	272	329	384	539
	55/45/20 °C	109	140	170	198	275
500	75/65/20 °C	265	340	412	481	674
	55/45/20 °C	136	175	212	248	344
600	75/65/20 °C	317	408	494	577	808
	55/45/20 °C	164	210	254	297	412
700	75/65/20 °C 55/45/20 °C					
800	75/65/20 °C	423	544	658	769	1078
	55/45/20 °C	218	280	339	396	550
900	75/65/20 °C 55/45/20 °C					
1000	75/65/20 °C	529	680	823	961	1347
	55/45/20 °C	273	350	424	495	687
1100	75/65/20 °C 55/45/20 °C					
1200	75/65/20 °C	635	816	988	1153	1616
	55/45/20 °C	327	421	509	594	825
1400	75/65/20 °C	741	952	1152	1345	1886
	55/45/20 °C	382	491	594	693	962
1600	75/65/20 °C	846	1088	1317	1538	2155
	55/45/20 °C	436	561	679	792	1100
1800	75/65/20 °C	952	1224	1481	1730	2425
	55/45/20 °C	491	631	763	891	1237
2000	75/65/20 °C	1058	1360	1646	1922	2694
	55/45/20 °C	545	701	848	990	1375
2300	75/65/20 °C	1217	1564	1893	2210	
	55/45/20 °C	627	806	975	1139	
2600	75/65/20 °C	1375	1768	2140	2499	
	55/45/20 °C	709	911	1103	1287	
3000	75/65/20 °C	1587	2040	2469	2883	
	55/45/20 °C	818	1051	1272	1485	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C exponent n	663 1.2820	852 1.2820	1032 1.2827	1205 1.2831	1694 1.3013
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type 21s

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RCV 21s 600 x 1200 L**



name

type

height

length

L : only for the left side version

(no letter: standard, i.e. the right side version)



length [mm]	parameters $t_z / t_p / t_i$	height [mm]				
		300	400	500	600	900
400	75/65/20 °C	293	372	445	515	706
	55/45/20 °C	151	191	228	264	354
500	75/65/20 °C	366	465	557	644	883
	55/45/20 °C	189	239	286	329	442
600	75/65/20 °C	439	557	668	773	1059
	55/45/20 °C	227	287	343	395	531
700	75/65/20 °C 55/45/20 °C					
800	75/65/20 °C	586	743	890	1030	1412
	55/45/20 °C	302	383	457	527	707
900	75/65/20 °C 55/45/20 °C					
1000	75/65/20 °C	732	929	1113	1288	1765
	55/45/20 °C	378	478	571	659	884
1100	75/65/20 °C 55/45/20 °C					
1200	75/65/20 °C	878	1115	1336	1546	2118
	55/45/20 °C	454	574	685	791	1061
1400	75/65/20 °C	1025	1301	1558	1803	2471
	55/45/20 °C	529	670	800	923	1238
1600	75/65/20 °C	1171	1486	1781	2061	2824
	55/45/20 °C	605	765	914	1054	1415
1800	75/65/20 °C	1318	1672	2003	2318	3177
	55/45/20 °C	680	861	1028	1186	1592
2000	75/65/20 °C	1464	1858	2226	2576	3530
	55/45/20 °C	756	957	1142	1318	1769
2300	75/65/20 °C	1684	2137	2560	2962	
	55/45/20 °C	869	1100	1314	1516	
2600	75/65/20 °C	1903	2415	2894	3349	
	55/45/20 °C	983	1243	1485	1713	
3000	75/65/20 °C	2196	2787	3339	3864	
	55/45/20 °C	1134	1435	1714	1977	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	917	1165	1397	1619	2234
exponent n	1.2786	1.2850	1.2907	1.2967	1.3371



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RCV 22 600 x 1200 L**



name _____
 type _____
 height _____
 length _____
 L : only for the left side version
 (no letter: standard, i.e. the right side version)

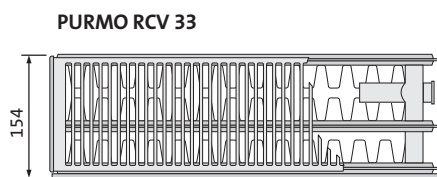
length [mm]	parameters $t_z / t_p / t_i$	height [mm]				
		300	400	500	600	900
400	75/65/20 °C	375	479	578	670	920
	55/45/20 °C	191	244	292	337	458
500	75/65/20 °C	469	599	722	838	1151
	55/45/20 °C	239	304	365	422	573
600	75/65/20 °C	562	719	866	1006	1381
	55/45/20 °C	287	365	438	506	688
700	75/65/20 °C 55/45/20 °C					
800	75/65/20 °C	750	958	1155	1341	1841
	55/45/20 °C	383	487	584	674	917
900	75/65/20 °C 55/45/20 °C					
1000	75/65/20 °C	937	1198	1444	1676	2301
	55/45/20 °C	479	609	730	843	1146
1100	75/65/20 °C 55/45/20 °C					
1200	75/65/20 °C	1124	1438	1733	2011	2761
	55/45/20 °C	574	731	876	1012	1375
1400	75/65/20 °C	1312	1677	2022	2346	3221
	55/45/20 °C	670	852	1022	1180	1604
1600	75/65/20 °C	1499	1917	2310	2682	3682
	55/45/20 °C	766	974	1168	1349	1833
1800	75/65/20 °C	1687	2156	2599	3017	4142
	55/45/20 °C	861	1096	1314	1517	2063
2000	75/65/20 °C	1874	2396	2888	3352	4602
	55/45/20 °C	957	1218	1460	1686	2292
2300	75/65/20 °C	2155	2755	3321	3855	
	55/45/20 °C	1101	1400	1679	1939	
2600	75/65/20 °C	2436	3115	3754	4358	
	55/45/20 °C	1244	1583	1898	2192	
3000	75/65/20 °C	2811	3594	4332	5028	
	55/45/20 °C	1436	1826	2190	2529	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1178	1509	1822	2119	2919
exponent n	1.3000	1.3100	1.3197	1.3295	1.3488

type 33

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RCV 33 600 x 1200 L**



name _____
 type _____
 height _____
 length _____
 L : only for the left side version
 (no letter: standard, i.e. the right side version)



length [mm]	parameters t _z / t _p / t _i	height [mm]				
		300	400	500	600	900
400	75/65/20 °C	526	666	798	924	1268
	55/45/20 °C	266	336	400	462	628
500	75/65/20 °C	657	832	997	1155	1586
	55/45/20 °C	333	420	501	577	785
600	75/65/20 °C	788	998	1196	1385	1903
	55/45/20 °C	399	503	601	692	941
700	75/65/20 °C 55/45/20 °C					
800	75/65/20 °C	1051	1331	1595	1847	2537
	55/45/20 °C	532	671	801	923	1255
900	75/65/20 °C 55/45/20 °C					
1000	75/65/20 °C	1314	1664	1994	2309	3171
	55/45/20 °C	666	839	1001	1154	1569
1100	75/65/20 °C 55/45/20 °C					
1200	75/65/20 °C	1577	1997	2393	2771	3805
	55/45/20 °C	799	1007	1201	1385	1883
1400	75/65/20 °C	1840	2330	2792	3233	4439
	55/45/20 °C	932	1175	1402	1616	2197
1600	75/65/20 °C	2102	2662	3190	3694	5074
	55/45/20 °C	1065	1343	1602	1847	2511
1800	75/65/20 °C	2365	2995	3589	4156	5708
	55/45/20 °C	1198	1510	1802	2077	2824
2000	75/65/20 °C	2628	3328	3988	4618	6342
	55/45/20 °C	1331	1678	2002	2308	3138
2300	75/65/20 °C	3022	3827	4586	5311	
	55/45/20 °C	1531	1930	2303	2655	
2600	75/65/20 °C	3416	4326	5184	6003	
	55/45/20 °C	1731	2182	2603	3001	
3000	75/65/20 °C	3942	4992	5982	6927	
	55/45/20 °C	1997	2517	3003	3462	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C exponent n	1657 1.3159	2102 1.3250	2525 1.3331	2923 1.3417	4007 1.3612
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RAMO VENTIL COMPACT M (PURMO RCVM)

The PURMO Ramo Ventil Contact M panel radiators with mid-bottom connectors stand out due to their flat front panel with slight horizontal ribbing. The panel is glued to the profiled, front base heating panel in a manner concealing any protruding edges, when looking at the radiator from the front. The radiators are equipped with convection fins as well as side covers and a top grille. Two mid-bottom and four side G ½ " threaded female connectors allow for central bottom or side connection. The radiator is also equipped with a built-in thermostatic Oventrop valve insert providing pre-setting.

The main advantage of the central bottom connection relies on the fact that regardless of the length, height and depth of the radiator, the layout of heating system connections can be defined at the building shell stage and it will not change as a result of the selection of a specific size and type of the radiator.

technical specifications

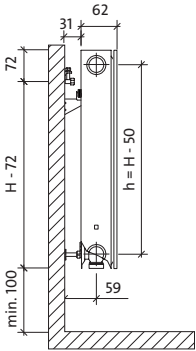
- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 33.3 mm
- Connections : 2 x G ½ " mid-bottom connectors,
4 x G ½ " side connectors
- Working pressure : 10 bar • Maximal temperature : 110 °C • Test pressure : 13 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator : brackets, plugs, air vent.



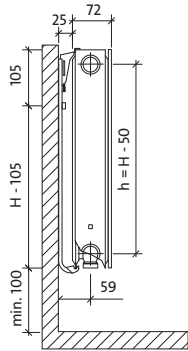
NOTE: the RCVM radiator is available in the right side version only.

side views

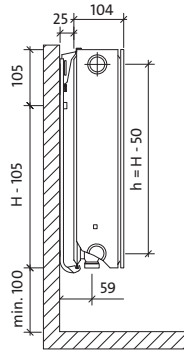
type RCVM 11



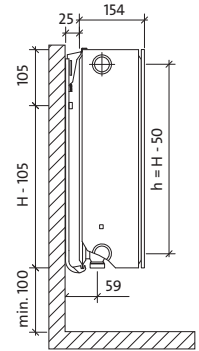
type RCVM 21s



type RCVM 22



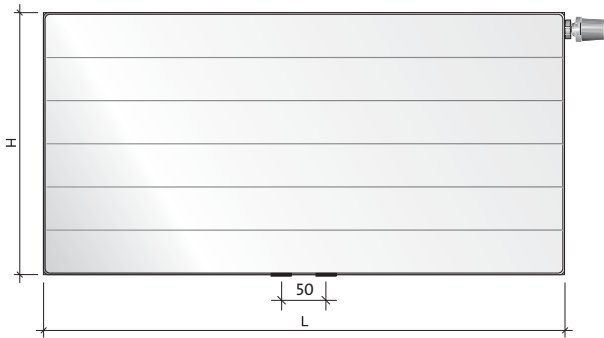
type RCVM 33



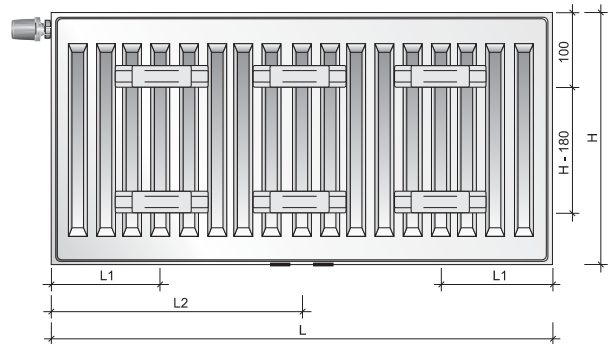
dimensions in mm

H = height
L = length
h = spacing of connectors

front view



rear view - RCVM 11 type only



water volume, weight and mounting distances

water volume : l/m

type	height	300	500	600	900
11		1.7	2.7	3.2	4.5
21s		3.4	5.5	6.6	9.0
22		3.4	5.5	6.6	9.0
33		5.1	8.2	9.8	13.3

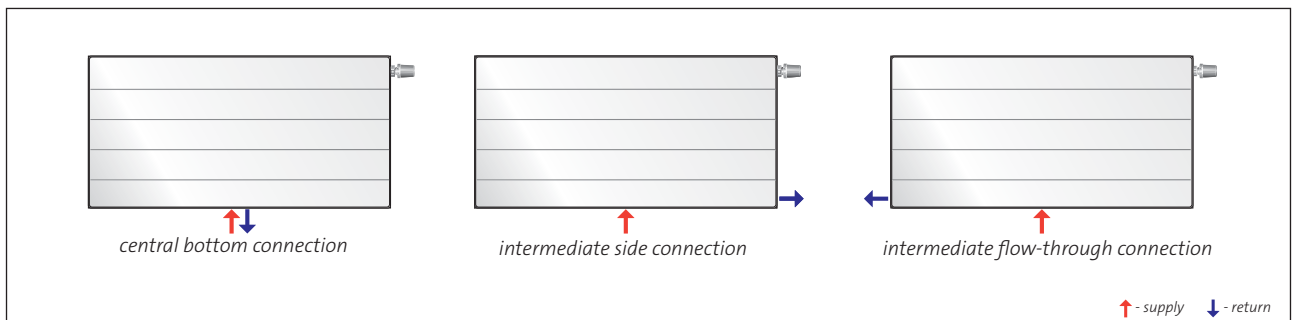
weight : kg/m

type	height	300	500	600	900
11		11.7	19.9	24.0	36.2
21s		16.7	27.9	33.5	50.1
22		19.0	32.2	38.8	58.8
33		27.2	46.1	55.5	83.6

mounting distances : mm

type	RCVM 11	
	L1	L2
400-1600	117	-
1800	117	917
2000	117	1017
2300	117	1150
2600	117	1317
3000	117	1517

recommended connections





RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RCVM 11 600 x 1200**



name _____
type _____
height _____
length _____

NOTE: the RCVM radiator is available in the right side version only.

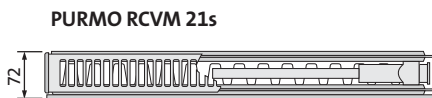
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	212	329	384	539
	55/45/20 °C	109	170	198	275
500	75/65/20 °C	265	412	481	674
	55/45/20 °C	136	212	248	344
600	75/65/20 °C	317	494	577	808
	55/45/20 °C	164	254	297	412
700	75/65/20 °C 55/45/20 °C				
800	75/65/20 °C	423	658	769	1078
	55/45/20 °C	218	339	396	550
900	75/65/20 °C 55/45/20 °C				
1000	75/65/20 °C	529	823	961	1347
	55/45/20 °C	273	424	495	687
1100	75/65/20 °C 55/45/20 °C				
1200	75/65/20 °C	635	988	1153	1616
	55/45/20 °C	327	509	594	825
1400	75/65/20 °C	741	1152	1345	1886
	55/45/20 °C	382	594	693	962
1600	75/65/20 °C	846	1317	1538	2155
	55/45/20 °C	436	679	792	1100
1800	75/65/20 °C	952	1481	1730	2425
	55/45/20 °C	491	763	891	1237
2000	75/65/20 °C	1058	1646	1922	2694
	55/45/20 °C	545	848	990	1375
2300	75/65/20 °C	1217	1893	2210	
	55/45/20 °C	627	975	1139	
2600	75/65/20 °C	1375	2140	2499	
	55/45/20 °C	709	1103	1287	
3000	75/65/20 °C	1587	2469	2883	
	55/45/20 °C	818	1272	1485	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	663	1032	1205	1694
exponent n	1.2820	1.2827	1.2831	1.3013

type 21s

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RCVM 21s 600 x 1200**



name _____
type _____
height _____
length _____



NOTE: the RCVM radiator is available in the right side version only.

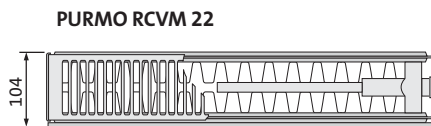
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	293	445	515	706
	55/45/20 °C	151	228	264	354
500	75/65/20 °C	366	557	644	883
	55/45/20 °C	189	286	329	442
600	75/65/20 °C	439	668	773	1059
	55/45/20 °C	227	343	395	531
700	75/65/20 °C 55/45/20 °C				
800	75/65/20 °C	586	890	1030	1412
	55/45/20 °C	302	457	527	707
900	75/65/20 °C 55/45/20 °C				
1000	75/65/20 °C	732	1113	1288	1765
	55/45/20 °C	378	571	659	884
1100	75/65/20 °C 55/45/20 °C				
1200	75/65/20 °C	878	1336	1546	2118
	55/45/20 °C	454	685	791	1061
1400	75/65/20 °C	1025	1558	1803	2471
	55/45/20 °C	529	800	923	1238
1600	75/65/20 °C	1171	1781	2061	2824
	55/45/20 °C	605	914	1054	1415
1800	75/65/20 °C	1318	2003	2318	3177
	55/45/20 °C	680	1028	1186	1592
2000	75/65/20 °C	1464	2226	2576	3530
	55/45/20 °C	756	1142	1318	1769
2300	75/65/20 °C	1684	2560	2962	
	55/45/20 °C	869	1314	1516	
2600	75/65/20 °C	1903	2894	3349	
	55/45/20 °C	983	1485	1713	
3000	75/65/20 °C	2196	3339	3864	
	55/45/20 °C	1134	1714	1977	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	917	1397	1619	2234
exponent n	1.2786	1.2907	1.2967	1.3371



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RCVM 22 600 x 1200**



name _____
type _____
height _____
length _____

NOTE: the RCVM radiator is available in the right side version only.

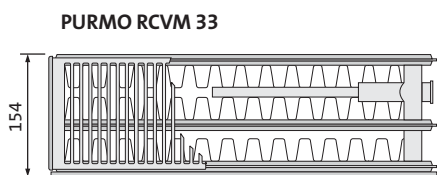
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	375	578	670	920
	55/45/20 °C	191	292	337	458
500	75/65/20 °C	469	722	838	1151
	55/45/20 °C	239	365	422	573
600	75/65/20 °C	562	866	1006	1381
	55/45/20 °C	287	438	506	688
700	75/65/20 °C 55/45/20 °C				
800	75/65/20 °C	750	1155	1341	1841
	55/45/20 °C	383	584	674	917
900	75/65/20 °C 55/45/20 °C				
1000	75/65/20 °C	937	1444	1676	2301
	55/45/20 °C	479	730	843	1146
1100	75/65/20 °C 55/45/20 °C				
1200	75/65/20 °C	1124	1733	2011	2761
	55/45/20 °C	574	876	1012	1375
1400	75/65/20 °C	1312	2022	2346	3221
	55/45/20 °C	670	1022	1180	1604
1600	75/65/20 °C	1499	2310	2682	3682
	55/45/20 °C	766	1168	1349	1833
1800	75/65/20 °C	1687	2599	3017	4142
	55/45/20 °C	861	1314	1517	2063
2000	75/65/20 °C	1874	2888	3352	4602
	55/45/20 °C	957	1460	1686	2292
2300	75/65/20 °C	2155	3321	3855	
	55/45/20 °C	1101	1679	1939	
2600	75/65/20 °C	2436	3754	4358	
	55/45/20 °C	1244	1898	2192	
3000	75/65/20 °C	2811	4332	5028	
	55/45/20 °C	1436	2190	2529	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1178	1822	2119	2919
exponent n	1.3000	1.3197	1.3295	1.3488

type 33

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RCVM 33 600 x 1200**






NOTE: the RCVM radiator is available in the right side version only.

length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		300	500	600	900
400	75/65/20 °C	526	798	924	1268
	55/45/20 °C	266	400	462	628
500	75/65/20 °C	657	997	1155	1586
	55/45/20 °C	333	501	577	785
600	75/65/20 °C	788	1196	1385	1903
	55/45/20 °C	399	601	692	941
700	75/65/20 °C 55/45/20 °C				
800	75/65/20 °C	1051	1595	1847	2537
	55/45/20 °C	532	801	923	1255
900	75/65/20 °C 55/45/20 °C				
1000	75/65/20 °C	1314	1994	2309	3171
	55/45/20 °C	666	1001	1154	1569
1100	75/65/20 °C 55/45/20 °C				
1200	75/65/20 °C	1577	2393	2771	3805
	55/45/20 °C	799	1201	1385	1883
1400	75/65/20 °C	1840	2792	3233	4439
	55/45/20 °C	932	1402	1616	2197
1600	75/65/20 °C	2102	3190	3694	5074
	55/45/20 °C	1065	1602	1847	2511
1800	75/65/20 °C	2365	3589	4156	5708
	55/45/20 °C	1198	1802	2077	2824
2000	75/65/20 °C	2628	3988	4618	6342
	55/45/20 °C	1331	2002	2308	3138
2300	75/65/20 °C	3022	4586	5311	
	55/45/20 °C	1531	2303	2655	
2600	75/65/20 °C	3416	5184	6003	
	55/45/20 °C	1731	2603	3001	
3000	75/65/20 °C	3942	5982	6927	
	55/45/20 °C	1997	3003	3462	

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1657	2525	2923	4007
exponent n	1.3159	1.3331	1.3417	1.3612

Radiators of height 200 mm

		types
	<p>Ventil Compact</p> <p>A versatile panel radiator with profiled heating panels and convection fins.</p> <p>6 connections</p> <p>height [mm]: 200 length [mm]: 600 - 3000</p>	<p>CV 21s</p> <p>CV 22</p> <p>CV 33</p> <p>CV 44</p>
	<p>Plan Ventil Compact</p> <p>A versatile panel radiator with a flat front panel and a profiled rear panel.</p> <p>6 connections</p> <p>height [mm]: 200 length [mm]: 600 - 3000</p>	<p>FCV 21s</p> <p>FCV 22</p> <p>FCV 33</p> <p>FCV 44</p>
	<p>Ramo Ventil Compact</p> <p>A versatile panel radiator with a flat, slightly horizontally ribbed front panel and a profiled rear panel.</p> <p>6 connections</p> <p>height [mm]: 200 length [mm]: 600 - 3000</p>	<p>RCV 21s</p> <p>RCV 22</p> <p>RCV 33</p> <p>RCV 44</p>
	<p>Plan Ventil Compact D</p> <p>A versatile, flat on both sides panel radiator. Front and rear panels are completely flat.</p> <p>6 connections</p> <p>height [mm]: 200 length [mm]: 600 - 3000</p>	<p>FFCV 21s</p> <p>FFCV 22</p> <p>FFCV 33</p> <p>FFCV 44</p>
	<p>Ramo Ventil Compact D</p> <p>A versatile, flat on both sides panel radiator. Front and rear panels are slightly horizontally ribbed.</p> <p>6 connections</p> <p>height [mm]: 200 length [mm]: 600 - 3000</p>	<p>RRCV 21s</p> <p>RRCV 22</p> <p>RRCV 33</p> <p>RRCV 44</p>

	Ventil Compact	Plan Ventil Compact	Ramo Ventil Compact	Plan Ventil Compact D	Ramo Ventil Compact D
profiled front panel	X	-	-	-	-
flat front panel	-	X	X	X	X
flat rear panel	-	-	-	X	X
max. working pressure [bar]	10	10	10	10	10
no. of connectors – side + bottom	4 + 2	4 + 2	4 + 2	4 + 2	4 + 2
side connection – GW ½ "	X	X	X	X	X
bottom connection – GW ½ "	X	X	X	X	X
mid-bottom connection – GW ½ "	-	-	-	-	-
brackets bundled with the radiator	-	-	-	-	-
side covers	X	X	X	X	X
top grille	X	X	X	X	X
built-in thermostatic valve	X	X	X	X	X

NOTE: Mounting brackets must be ordered separately. For the method of selecting and ordering see page 106

water volume and weight

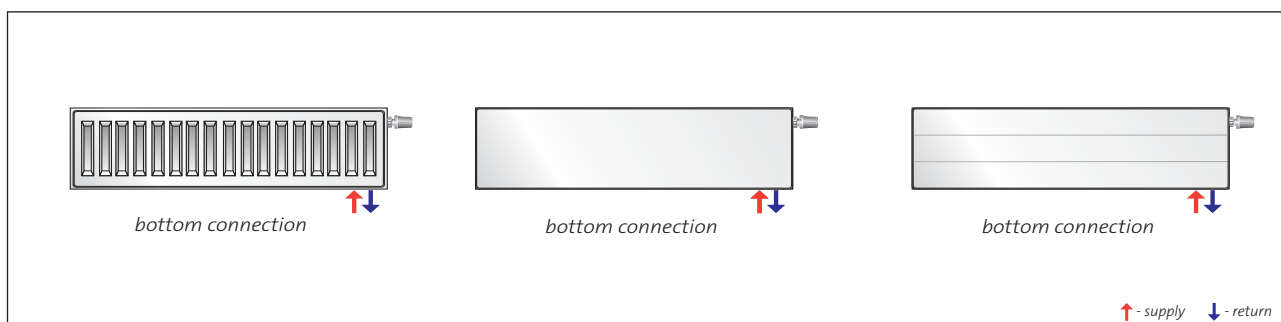
water volume : l/m

radiator \ type	21s	22	33	44
Ventil Compact	2.5	2.5	3.8	5.5
Plan Ventil Compact	2.5	2.5	3.8	5.5
Ramo Ventil Compact	2.5	2.5	3.8	5.5
Plan Ventil Compact D	2.5	2.5	3.8	5.5
Ramo Ventil Compact D	2.5	2.5	3.8	5.5

weight : kg/m

radiator \ type	21s	22	33	44
Ventil Compact	10.8	13.3	19.8	26.3
Plan Ventil Compact	12.4	15.0	21.4	28.0
Ramo Ventil Compact	12.4	15.0	21.4	28.0
Plan Ventil Compact D	13.9	16.6	23.1	29.8
Ramo Ventil Compact D	13.9	16.6	23.1	29.8

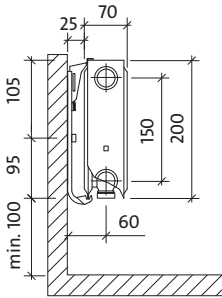
connection examples



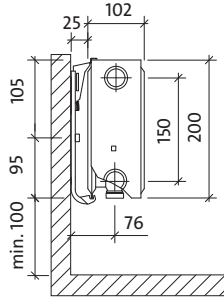
Side views

Ventil Compact - wall brackets

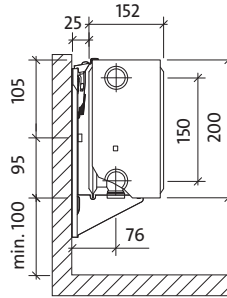
type CV 21 s



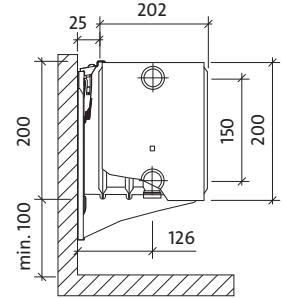
type CV 22



type CV 33

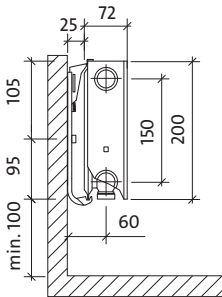


type CV 44

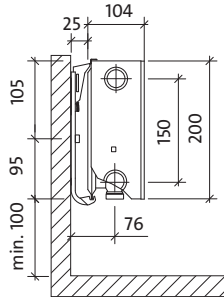


Plan Ventil Compact and Ramo Ventil Compact - wall brackets

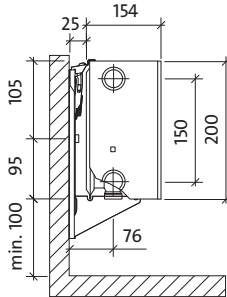
type FCV 21 s
type RCV 21 s



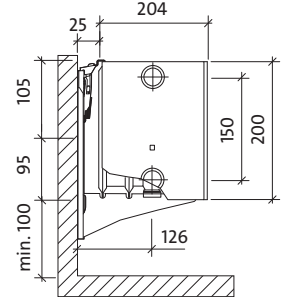
type FCV 22
type RCV 22



type FCV 33
type RCV 33

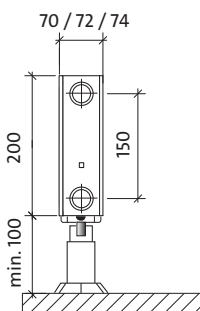


type FCV 44
type RCV 44

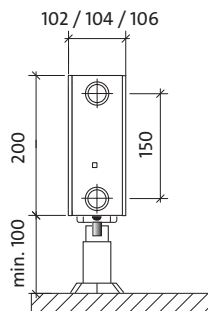


Ventil Compact, Plan Ventil Compact, Ramo Ventil Compact, Plan Ventil Compact D and Ramo Ventil Compact D

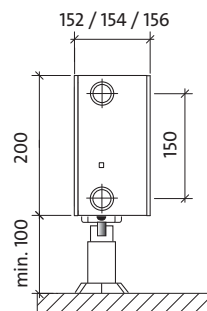
type CV 21 s
type FCV 21 s
type RCV 21 s
type FFCV 21 s
type RRCV 21 s



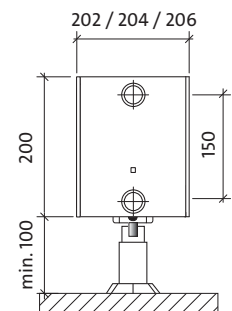
type CV 22
type FCV 22
type RCV 22
type FFCV 22
type RRCV 22



type CV 33
type FCV 33
type RCV 33
type FFCV 33
type RRCV 33

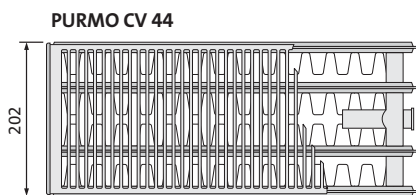


type CV 44
type FCV 44
type RCV 44
type FFCV 44
type RRCV 44



height 200

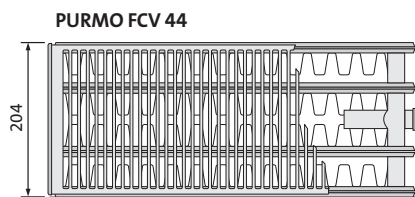
RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO CV 44 200 x 1200**



length [mm]	parameters $t_z / t_p / t_i$	type			
		CV 21 s	CV 22	CV 33	CV 44
400	75/65/20 °C 55/45/20 °C				
500	75/65/20 °C 55/45/20 °C				
600	75/65/20 °C 55/45/20 °C	329 165	434 219	613 307	802 399
700	75/65/20 °C 55/45/20 °C	384 193	507 255	715 358	936 465
800	75/65/20 °C 55/45/20 °C	439 220	579 292	818 409	1070 532
900	75/65/20 °C 55/45/20 °C	494 248	652 328	920 460	1203 598
1000	75/65/20 °C 55/45/20 °C	549 276	724 365	1022 511	1337 665
1100	75/65/20 °C 55/45/20 °C	604 303	794 400	1124 562	1471 732
1200	75/65/20 °C 55/45/20 °C	659 331	869 438	1226 613	1604 798
1400	75/65/20 °C 55/45/20 °C	769 386	1014 511	1431 716	1872 931
1600	75/65/20 °C 55/45/20 °C	879 441	1158 583	1635 818	2139 1064
1800	75/65/20 °C 55/45/20 °C	988 496	1303 656	1840 920	2407 1197
2000	75/65/20 °C 55/45/20 °C	1098 551	1448 729	2044 1022	2674 1330
2300	75/65/20 °C 55/45/20 °C	1263 634	1665 839	2351 1176	3075 1529
2600	75/65/20 °C 55/45/20 °C	1427 716	1882 948	2657 1329	3476 1729
3000	75/65/20 °C 55/45/20 °C	1647 827	2172 1094	3066 1534	4011 1995

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	694	915	1294	1697
exponent n	1.3332	1.3269	1.3403	1.3516



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FCV 44 200 x 1200**

name _____
type _____
height _____
length _____

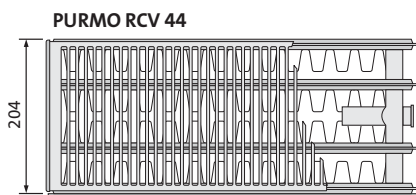
length [mm]	parameters $t_z / t_p / t_i$	type			
		FCV 21 s	FCV 22	FCV 33	FCV 44
400	75/65/20 °C 55/45/20 °C				
500	75/65/20 °C 55/45/20 °C				
600	75/65/20 °C 55/45/20 °C	330 167	434 219	628 315	803 401
700	75/65/20 °C 55/45/20 °C	385 195	507 256	733 368	937 468
800	75/65/20 °C 55/45/20 °C	440 223	579 292	838 421	1071 535
900	75/65/20 °C 55/45/20 °C	495 250	652 329	942 473	1205 602
1000	75/65/20 °C 55/45/20 °C	550 278	724 365	1047 526	1339 669
1100	75/65/20 °C 55/45/20 °C	605 306	796 402	1152 578	1473 736
1200	75/65/20 °C 55/45/20 °C	660 334	869 438	1256 630	1607 803
1400	75/65/20 °C 55/45/20 °C	770 390	1014 512	1466 736	1875 936
1600	75/65/20 °C 55/45/20 °C	880 445	1158 584	1675 841	2142 1070
1800	75/65/20 °C 55/45/20 °C	990 501	1303 657	1885 946	2410 1204
2000	75/65/20 °C 55/45/20 °C	1100 556	1448 730	2094 1051	2678 1337
2300	75/65/20 °C 55/45/20 °C	1265 640	1665 840	2408 1209	3080 1538
2600	75/65/20 °C 55/45/20 °C	1430 723	1882 949	2722 1366	3481 1739
3000	75/65/20 °C 55/45/20 °C	1650 835	2172 1096	3141 1577	4017 2006

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	694	914	1325	1697
exponent n	1.3186	1.3238	1.3337	1.3433

height 200

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RCV 44 200 x 1200**



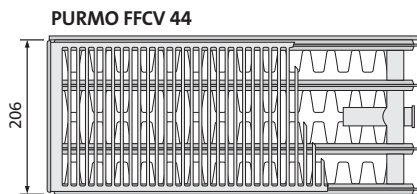
name
type
height
length



length [mm]	parameters $t_z / t_p / t_i$	type			
		RCV 21 s	RCV 22	RCV 33	RCV 44
400	75/65/20 °C 55/45/20 °C				
500	75/65/20 °C 55/45/20 °C				
600	75/65/20 °C 55/45/20 °C	330 167	434 219	628 315	803 401
700	75/65/20 °C 55/45/20 °C	385 195	507 256	733 368	937 468
800	75/65/20 °C 55/45/20 °C	440 223	579 292	838 421	1071 535
900	75/65/20 °C 55/45/20 °C	495 250	652 329	942 473	1205 602
1000	75/65/20 °C 55/45/20 °C	550 278	724 365	1047 526	1339 669
1100	75/65/20 °C 55/45/20 °C	605 306	796 402	1152 578	1473 736
1200	75/65/20 °C 55/45/20 °C	660 334	869 438	1256 630	1607 803
1400	75/65/20 °C 55/45/20 °C	770 390	1014 512	1466 736	1875 936
1600	75/65/20 °C 55/45/20 °C	880 445	1158 584	1675 841	2142 1070
1800	75/65/20 °C 55/45/20 °C	990 501	1303 657	1885 946	2410 1204
2000	75/65/20 °C 55/45/20 °C	1100 556	1448 730	2094 1051	2678 1337
2300	75/65/20 °C 55/45/20 °C	1265 640	1665 840	2408 1209	3080 1538
2600	75/65/20 °C 55/45/20 °C	1430 723	1882 949	2722 1366	3481 1739
3000	75/65/20 °C 55/45/20 °C	1650 835	2172 1096	3141 1577	4017 2006

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	694	914	1325	1697
exponent n	1.3186	1.3238	1.3337	1.3433



RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO FFCV 44 200 x 1200**

name _____
type _____
height _____
length _____

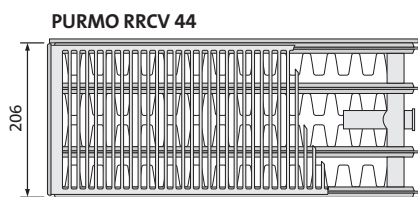
length [mm]	parameters $t_z / t_p / t_i$	type			
		FFCV 21 s	FFCV 22	FFCV 33	FFCV 44
400	75/65/20 °C 55/45/20 °C				
500	75/65/20 °C 55/45/20 °C				
600	75/65/20 °C 55/45/20 °C	322 163	430 218	598 298	793 397
700	75/65/20 °C 55/45/20 °C	376 191	502 254	697 348	925 463
800	75/65/20 °C 55/45/20 °C	430 218	574 291	797 398	1057 529
900	75/65/20 °C 55/45/20 °C	483 245	645 326	896 447	1189 595
1000	75/65/20 °C 55/45/20 °C	537 272	717 363	996 497	1321 661
1100	75/65/20 °C 55/45/20 °C	591 300	789 399	1096 547	1453 727
1200	75/65/20 °C 55/45/20 °C	644 327	860 435	1195 596	1585 793
1400	75/65/20 °C 55/45/20 °C	752 381	1004 508	1394 695	1849 925
1600	75/65/20 °C 55/45/20 °C	859 436	1147 581	1594 795	2114 1058
1800	75/65/20 °C 55/45/20 °C	967 490	1291 653	1793 894	2378 1190
2000	75/65/20 °C 55/45/20 °C	1074 545	1434 726	1992 994	2642 1322
2300	75/65/20 °C 55/45/20 °C	1235 626	1649 835	2291 1143	3038 1520
2600	75/65/20 °C 55/45/20 °C	1396 708	1864 943	2590 1292	3435 1719
3000	75/65/20 °C 55/45/20 °C	1611 817	2151 1089	2988 1490	3963 1983

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	677	904	1263	1673
exponent n	1.3136	1.3176	1.3458	1.3396

height 200

RADIATOR DESCRIPTION - AN EXAMPLE : **PURMO RRCV 44 200 x 1200**



name
type
height
length



length [mm]	parameters $t_z / t_p / t_i$	type			
		RRCV 21 s	RRCV 22	RRCV 33	RRCV 44
400	75/65/20 °C 55/45/20 °C				
500	75/65/20 °C 55/45/20 °C				
600	75/65/20 °C 55/45/20 °C	322 163	430 218	598 298	793 397
700	75/65/20 °C 55/45/20 °C	376 191	502 254	697 348	925 463
800	75/65/20 °C 55/45/20 °C	430 218	574 291	797 398	1057 529
900	75/65/20 °C 55/45/20 °C	483 245	645 326	896 447	1189 595
1000	75/65/20 °C 55/45/20 °C	537 272	717 363	996 497	1321 661
1100	75/65/20 °C 55/45/20 °C	591 300	789 399	1096 547	1453 727
1200	75/65/20 °C 55/45/20 °C	644 327	860 435	1195 596	1585 793
1400	75/65/20 °C 55/45/20 °C	752 381	1004 508	1394 695	1849 925
1600	75/65/20 °C 55/45/20 °C	859 436	1147 581	1594 795	2114 1058
1800	75/65/20 °C 55/45/20 °C	967 490	1291 653	1793 894	2378 1190
2000	75/65/20 °C 55/45/20 °C	1074 545	1434 726	1992 994	2642 1322
2300	75/65/20 °C 55/45/20 °C	1235 626	1649 835	2291 1143	3038 1520
2600	75/65/20 °C 55/45/20 °C	1396 708	1864 943	2590 1292	3435 1719
3000	75/65/20 °C 55/45/20 °C	1611 817	2151 1089	2988 1490	3963 1983

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	677	904	1263	1673
exponent n	1.3136	1.3176	1.3458	1.3396



VERTICAL

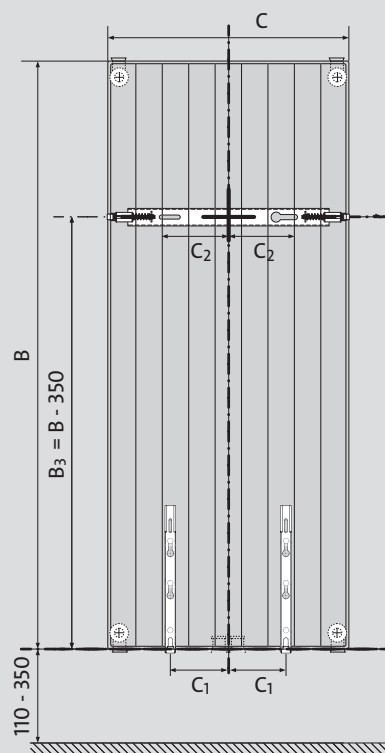
The PURMO Vertical panel radiators are a vertical variant intended for installation on narrow and tall fragments of walls. The radiators are equipped with convection fins (except for the 10 and 20C types) and side covers (except for the 10 type). They have no top grille. Four bottom and two top G ½ " threaded female connectors allow for bottom (including central) or side connection. The radiator is not equipped with a built-in thermostatic valve insert.

technical specifications

- Material : high quality, deep-drawing, low-carbon, cold rolled DC01 steel sheet in accordance with PN-EN 10130.
- Spacing of vertical water channels : 50 mm
- Connections : 4 x G ½ " bottom, 2 x G ½ " top connectors – for the installation of a plug and an air vent.
- Working pressure : 6 bar

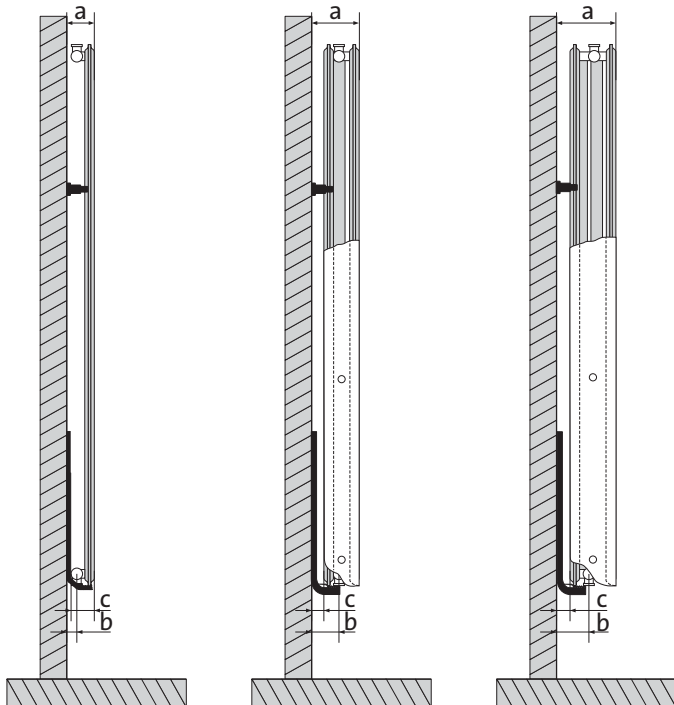


- Maximal temperature : 99 °C
- Test pressure : 8 bar
- Colour : RAL 9016 white, other colours from the RAL colour chart are available on request.
- Accessories bundled with the radiator : brackets, plug, air vent.



C	300	450	600	750
C ₁	75	100	175	250
C ₂	50	125	200	275

side views



Vertical 10

a : 80 mm
b : 43 mm
c : 65 mm

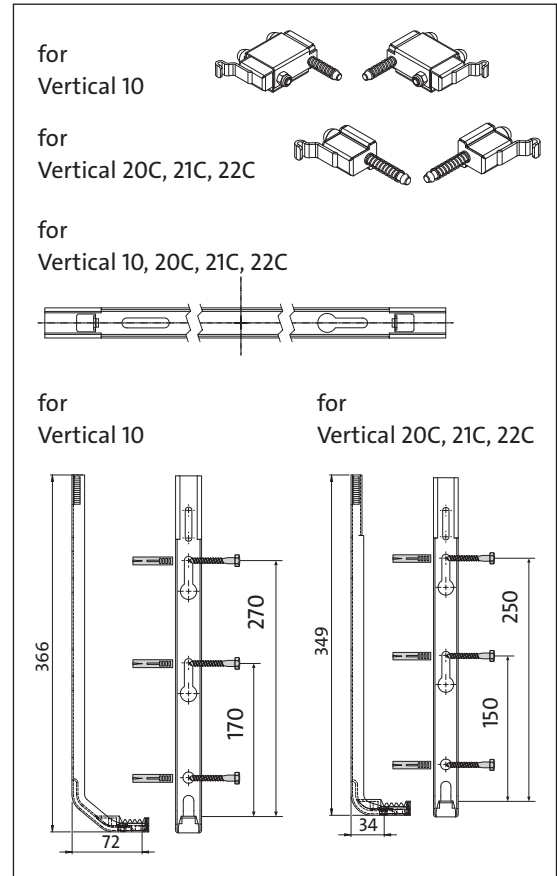
Vertical 20C, Vertical 21C

a : 108 mm
b : 67 mm
c : 27 mm

Vertical 22C

a : 133 mm
b : 67 mm
c : 27 mm

mounting distances



water volume and weight

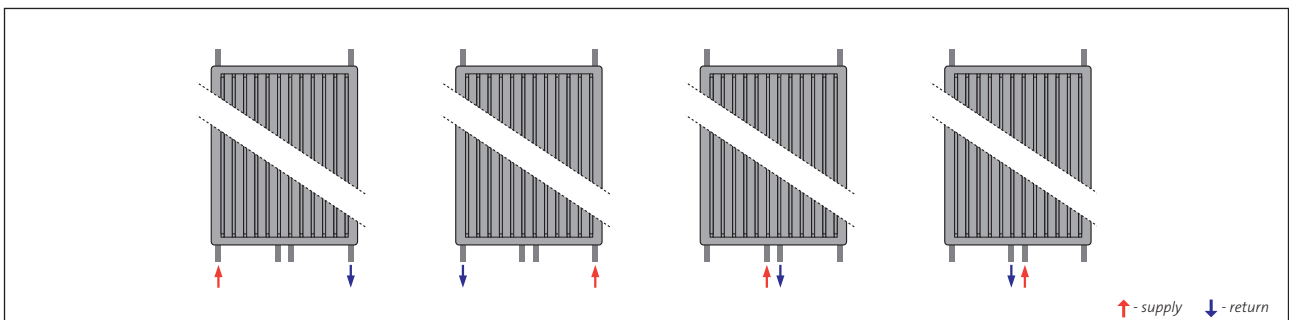
water volume : l/m

type	height	1500	1800	1950	2100	2300
10		9.83	10.13	11.07	12.00	-
20C		-	21.83	23.78	25.65	-
21C		-	21.47	24.13	25.47	-
22C		-	21.60	23.13	24.67	26.67

weight : kg/m

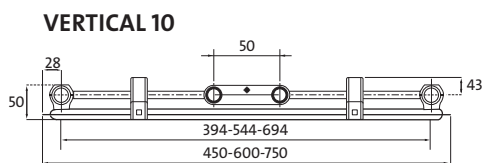
type	height	1500	1800	1950	2100	2300
10		31.33	37.47	38.67	40.13	-
20C		-	71.33	77.07	81.73	-
21C		-	83.07	91.33	96.93	-
22C		-	93.87	102.33	110.80	118.27

recommended connections





RADIATOR DESCRIPTION - AN EXAMPLE : **VERTICAL 10 1800 x 600**



name _____
type _____
height _____
length _____

Note! Pictorial drawing. The Vertical 10 has no side covers.

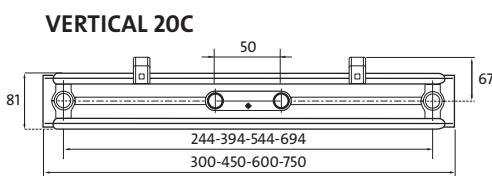
length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		1500	1800	1950	2100
300	75/65/20 °C				
	55/45/20 °C				
450	75/65/20 °C	650	765	819	876
	55/45/20 °C	332	386	410	436
600	75/65/20 °C	867	1020	1092	1168
	55/45/20 °C	443	514	547	581
750	75/65/20 °C		1275	1365	1460
	55/45/20 °C		643	684	726

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	1831	2164	2323	2490
exponent n	1.2976	1.3246	1.3381	1.3516



RADIATOR DESCRIPTION - AN EXAMPLE : **VERTICAL 20C 1800 x 600**



name _____
type _____
height _____
length _____

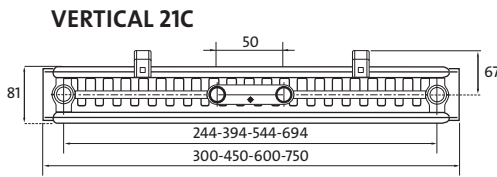
length [mm]	parameters $t_z / t_p / t_i$	height [mm]		
		1800	1950	2100
300	75/65/20 °C	819	877	935
	55/45/20 °C	416	445	473
450	75/65/20 °C	1229	1315	1403
	55/45/20 °C	625	667	710
600	75/65/20 °C	1638	1753	1870
	55/45/20 °C	833	889	946
750	75/65/20 °C	2048	2192	2338
	55/45/20 °C	1041	1112	1183

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

[W/m] 90/70/20 °C	3466	3713	3963
exponent n	1.3094	1.3135	1.3176

type 21C

RADIATOR DESCRIPTION - AN EXAMPLE : **VERTICAL 21C 1800 x 600**



name _____
type _____
height _____
length _____

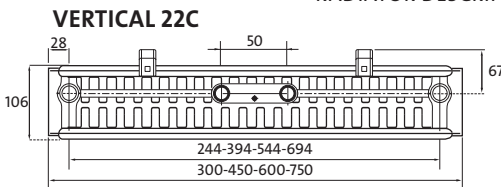


length [mm]	parameters $t_z / t_p / t_i$	height [mm]		
		1800	1950	2100
300	75/65/20 °C	963	1020	1081
	55/45/20 °C	482	510	542
450	75/65/20 °C	1445	1530	1621
	55/45/20 °C	724	765	812
600	75/65/20 °C	1926	2040	2162
	55/45/20 °C	964	1019	1083
750	75/65/20 °C	2408	2550	2702
	55/45/20 °C	1206	1274	1354
[W/m] 90/70/20 °C		4097	4343	4598
exponent n		1.3384	1.3422	1.3371

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

type 22C

RADIATOR DESCRIPTION - AN EXAMPLE : **VERTICAL 22C 1800 x 600**



name _____
type _____
height _____
length _____



The Vertical 22 type has all connectors positioned asymmetrically in reference to radiator panels.

length [mm]	parameters $t_z / t_p / t_i$	height [mm]			
		1800	1950	2100	2300
300	75/65/20 °C	1132	1192	1252	1332
	55/45/20 °C	561	590	618	657
450	75/65/20 °C	1698	1788	1877	1998
	55/45/20 °C	842	884	926	986
600	75/65/20 °C	2264	2384	2503	2663
	55/45/20 °C	1123	1179	1235	1314
750	75/65/20 °C	2830	2980	3129	3329
	55/45/20 °C	1404	1474	1544	1642
[W/m] 90/70/20 °C		4833	5093	5353	5696
exponent n		1.3566	1.3619	1.3672	1.3671

Thermal output of the radiators [W] in accordance with PN-EN 442-2 for parameters 75/65/20 °C and 55/45/20 °C. A surcharge for other colours - see page 113

Correction factors

heating medium temperature [°C]		value of the factor for selecting the heat output of the radiator at temperatures other than 75/65/20 °C							
		t _i air temperature in the heated room [°C]							
t _z	t _p	5	8	12	16	18	20	22	24
95	90	0.48	0.50	0.54	0.57	0.59	0.61	0.64	0.66
	85	0.50	0.52	0.56	0.60	0.62	0.64	0.67	0.70
	80	0.52	0.55	0.59	0.63	0.65	0.68	0.70	0.73
	75	0.54	0.57	0.61	0.66	0.69	0.72	0.75	0.78
	70	0.57	0.60	0.65	0.70	0.73	0.76	0.79	0.83
90	85	0.52	0.55	0.58	0.63	0.65	0.67	0.70	0.73
	80	0.54	0.57	0.61	0.66	0.68	0.71	0.74	0.77
	75	0.57	0.60	0.64	0.69	0.72	0.75	0.78	0.82
	70	0.59	0.63	0.67	0.73	0.76	0.80	0.83	0.87
	65	0.62	0.66	0.71	0.77	0.81	0.85	0.89	0.93
85	80	0.56	0.59	0.64	0.69	0.72	0.75	0.78	0.81
	75	0.59	0.62	0.67	0.72	0.75	0.79	0.82	0.86
	70	0.62	0.65	0.70	0.77	0.80	0.84	0.88	0.92
	65	0.65	0.69	0.75	0.81	0.85	0.89	0.94	0.99
	60	0.68	0.73	0.79	0.87	0.91	0.96	1.01	1.07
80	75	0.61	0.65	0.70	0.76	0.79	0.83	0.87	0.91
	70	0.64	0.68	0.74	0.81	0.84	0.88	0.93	0.97
	65	0.68	0.72	0.78	0.86	0.90	0.94	0.99	1.05
	60	0.72	0.76	0.83	0.91	0.96	1.01	1.07	1.13
	55	0.76	0.81	0.89	0.98	1.04	1.10	1.16	1.24
75	70	0.67	0.72	0.78	0.85	0.89	0.94	0.98	1.04
	65	0.71	0.75	0.82	0.90	0.95	1.00	1.05	1.12
	60	0.75	0.80	0.88	0.97	1.02	1.08	1.14	1.21
	55	0.80	0.85	0.94	1.04	1.10	1.17	1.24	1.32
	50	0.85	0.91	1.01	1.13	1.20	1.28	1.37	1.47
70	65	0.75	0.79	0.87	0.96	1.01	1.07	1.13	1.19
	60	0.79	0.84	0.93	1.03	1.08	1.15	1.22	1.30
	55	0.84	0.90	0.99	1.11	1.17	1.25	1.33	1.42
	50	0.89	0.96	1.07	1.20	1.28	1.37	1.47	1.58
65	60	0.83	0.89	0.98	1.10	1.16	1.23	1.31	1.40
	55	0.88	0.95	1.05	1.18	1.26	1.34	1.43	1.54
	50	0.94	1.02	1.14	1.29	1.37	1.47	1.59	1.71
60	55	0.94	1.01	1.13	1.27	1.36	1.45	1.56	1.68
	50	1.00	1.08	1.22	1.39	1.48	1.60	1.73	1.87
	45	1.08	1.17	1.33	1.53	1.65	1.78	1.94	2.13
55	50	1.07	1.16	1.31	1.50	1.62	1.75	1.90	2.07
	45	1.15	1.26	1.43	1.66	1.80	1.96	2.15	2.37
	40	1.25	1.37	1.59	1.86	2.03	2.24	2.48	2.78
50	45	1.23	1.36	1.56	1.82	1.98	2.17	2.40	2.67
	40	1.34	1.48	1.73	2.05	2.25	2.50	2.79	3.15
	35	1.47	1.65	1.94	2.36	2.63	2.96	3.38	3.92
45	40	1.45	1.62	1.90	2.28	2.53	2.83	3.19	3.66
	35	1.60	1.80	2.15	2.64	2.96	3.37	3.89	4.58
40	35	1.75	1.98	2.40	3.00	3.41	3.93	4.62	5.54
	30	1.96	2.25	2.79	3.61	4.21	5.01	6.14	7.87

The table has been prepared for n = 1.3

example:

The calculated room heat demand is 800 W. For the supply water the designed temperature is 55 °C, and for the return water it is 45°C. The designed air temperature in the room is 20 °C. For the values of parameters 55/45/20 °C, the correction factor value of 1.96 is red off.

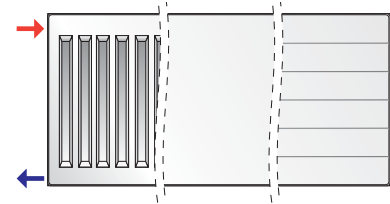
As a result of multiplying heat demand (800 W) by the correction factor (1.96), the value of heat output (800 W) by the correction factor (1.96), the value of heat output is found (1568 W). This value is used for selection of the radiator for the values of parameters 75/65/20 °C.

Connection methods

side connection

The most popular solution allowing for connecting radiators on either the right or the left side. The supply line should be connected to the top and the return line to the bottom connector pipe of the radiator. Reversed connection will cause a drop in the heat output

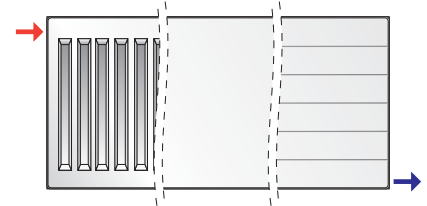
of over 30%. This side connection method can be used in the side-supplied radiators as well as in the bottom-supplied radiators after the removal of a thermostatic valve insert. Next pages contain tables with the heat output of the radiators for the one-side connection.



flow-through connection

Recommended for the radiators of length exceeding 2000 mm and also for the radiators of length exceeding four times their height. These connections provide even distribution of temperature over the entire length of the radiator. The supply line should be connected to the left or right connector pipe and the return

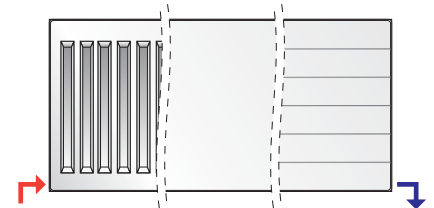
line should be connected to the opposite, bottom connector pipe. Reversed connection will cause a drop in the heat output of over 30%. This flow-through connection method can be used in the side-supplied radiators as well as in the bottom-supplied radiators after the removal of a thermostatic valve insert.



opposite ends connection

With this connection method, the heat output of the radiators will be approximately 10% lower than the rated heat output. This type of connection method is most commonly used with the side-supplied radiators when the

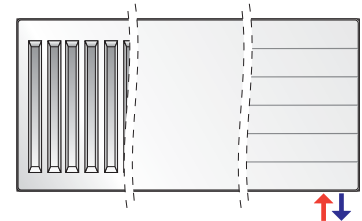
heating system piping is distributed in skirting boards above the floor. It can also be used with the bottom-supplied radiators after the removal of a thermostatic valve insert.



bottom connection

This connection method is used with the bottom-supplied radiators. The supply and return line axes are always located, respectively,

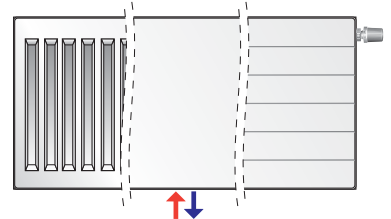
80 mm and 30 mm from the side edge of the radiator. Reversed connection will cause a drop in the heat output of over 30%.



mid-bottom connection

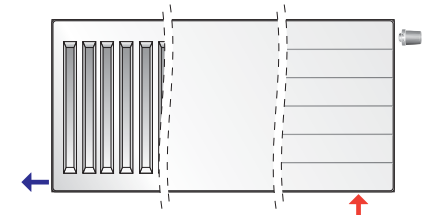
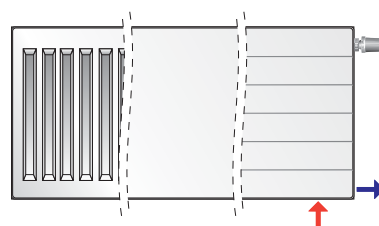
This connection method is used with the bottom-supplied radiators. The advantage of the central bottom connection relies on the fact that regardless of the length, height and depth of the radiator, the layout of heat-

ing system connections can be defined at the building shell stage and it will not change as a result of the selection of a specific size and type of the radiator. Reversed connection will cause a drop in the heat output of over 30%.



intermediate connection

The bottom-supplied radiators can be connected simultaneously with the side and bottom connections. Possible are intermediate solutions presented at the drawings: side and flow-through. These solutions correspond to the side and flow-through connections described above.



↑ - supply ↓ - return

Hydraulic characteristics

The value of pressure drop in the radiator depends on the mass flow of water flowing through.

For the single panel radiators, the value of pressure drop in the radiator can be determined with the following formula:

$$\Delta p = 0.0160 \times q^2 \quad kv = 2.5 \text{ m}^3/\text{h}$$

For the multiple panel radiators, the value of pressure drop in the radiator can be determined with the following formula:

$$\Delta p = 0.0105 \times q^2 \quad kv = 3.1 \text{ m}^3/\text{h}$$

where:

Δp - the drop of water flowing through the radiator in pascals [Pa]

q - the mass flow of water flowing through the radiator in kilograms per hour [kg/h]

For the bottom-supplied radiators equipped with a built-in valve insert, the hydraulic characteristics is determined for a set consisting of the radiator and the valve insert.

Starting from January 2011 all the bottom-supplied PURMO panel radiators are equipped with new valve Oventrop inserts with factory preset setpoint ranging from 2 to 6 depending on the size (heat output) of the particular radiator.

In order to provide an easy, visual distinction of the applied valve insert, colour coding of regulatory elements of the valve inserts was implemented.

preset setpoint	kv [m3/h]	colour	catalogue no.
2	0.13	white	165 11 62
3	0.27	black	165 11 63
4	0.42	green	165 11 64
5	0.56	blue	165 11 65
6	0.70	red	165 11 66

The hydraulic characteristics of these new valve inserts are very similar to the old type (catalogue no. 101 80 80).

Should a need arise, the setpoint of every new valve insert can be changed, just like in the case of the old type inserts.

Total length of the new valve inserts was modified due to an improved sealing, therefore they cannot be used in the radiators manufactured prior to January 2011 and equipped with the old-type of valve inserts.



old-type
insert

new-type
insert



series of new-type inserts

Hydraulic characteristics

example of preset setpoint selection

given:

heat demand

$$Q_c = 1160 \text{ W}$$

temperature difference

$$\Delta t = 20 \text{ K (np: 80/60 °C)}$$

pressure drop

$$\Delta p = 6 \text{ kPa} = 6000 \text{ Pa}$$

calculation constant

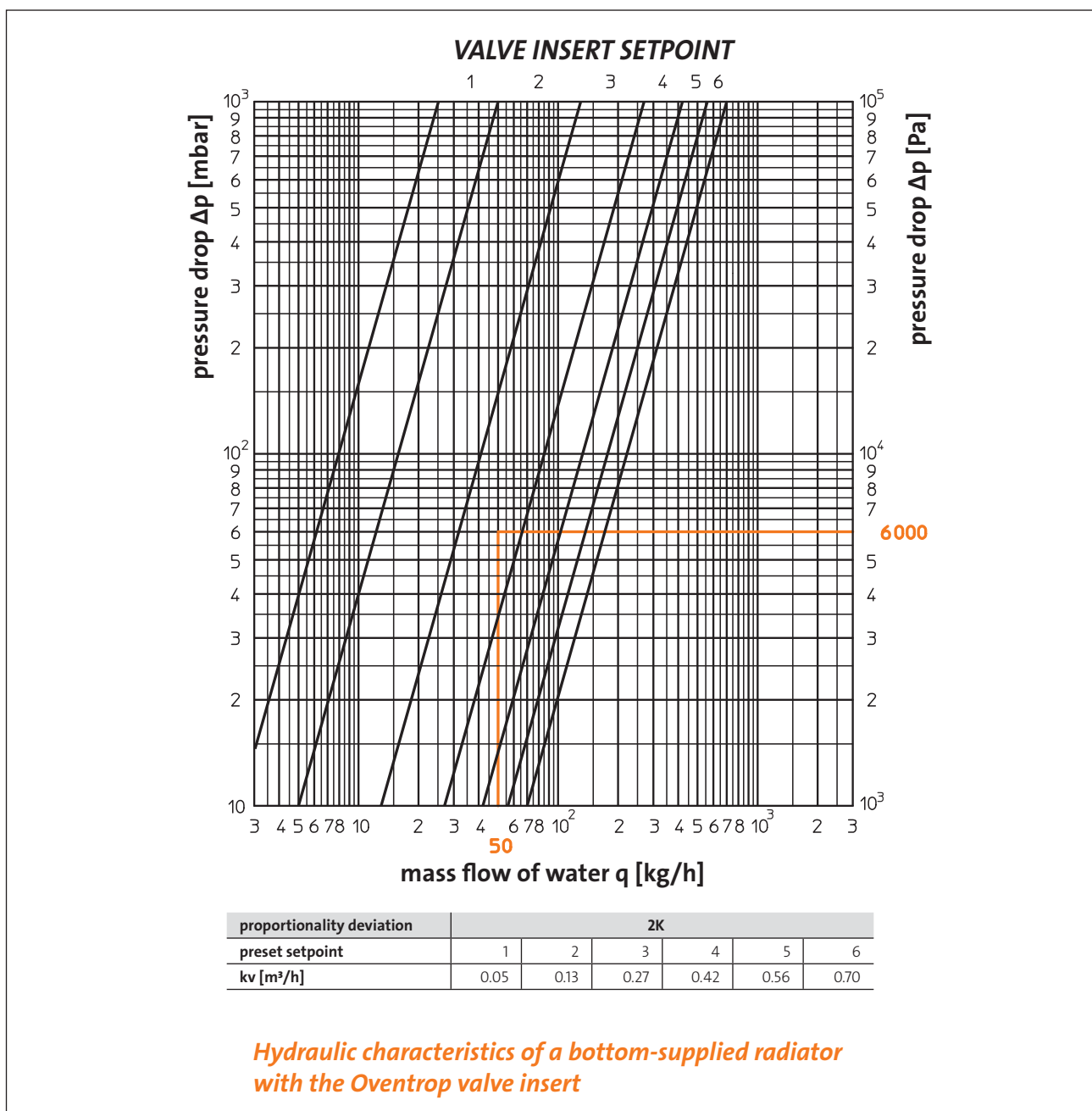
$$C = 1.163$$

calculations:

mass flow of water

$$q = \frac{Q_c}{C \times \Delta t} = \frac{1160}{1.163 \times 20} = 50 \text{ kg/h}$$

For the flow $q = 50 \text{ kg/h}$ and the pressure flow 6000 Pa the preset setpoint value 3 is red off the nomogram.



Thermostatic heads for radiators

For proper operation, the panel radiators with a built-in valve insert require an appropriate thermostatic head. Examples of types and manufacturers of thermostatic heads compatible with the new Oventrop valve inserts.

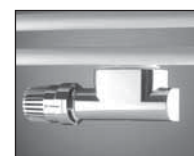
MANUFACTURER	CATALOGUE NUMBER
Purmo Sensor	AZ02HESENSOM3030
Comap Senso RI	100 100
Danfoss RAW-K 5135	013G5135
Heimeier K	6000-00.500, 6020-00.500 6040-00.500
Heimeier DX	6700-00.500
Heimeier D	6850-00.500
Heimeier B	2500-00.500, 2502-00.500
Heimeier WK	7300-00.500
Heimeier VD	7400-00.500
Herz Classic „H”	17260 98, 19260 98, 17330 98, 19330 98
Herz Mini „H”	19200 68, 19200 38
Herz Hercules „H”	19860 98

MANUFACTURER	CATALOGUE NUMBER
Honeywell Thera 2	T9001H(...), T9001W(...), T9001 08, T9001 20, T9001 50
Honeywell Thera 3	T6001H(...), T6001W(...), T6001 08, T6001 20, T6001 50
Honeywell Thera 4	T3001, T2001
Oventrop UNI XH	101 1365
Oventrop UNI LH	101 1465, 67, 68, 69
Oventrop UNI CH	101 1265
Oventrop UNI DH	101 1065
Oventrop UNI SH	101 2065
Schlosser Diamant	6001 00001
Schlosser Brillant	6002 0000 (...)
Valvex GZ 05A	4440010, 4440410
Valvex GZ 07A	4445000

The PURMO Vertical radiators are not equipped with any valve insert. They can be connected through special combined thermostatic valve assemblies with 50 mm spacing.

Examples of types and manufacturers are presented in the table.

MANUFACTURER	CATALOGUE NUMBER	
	VALVE	HEAD
Danfoss VHX-DUO + RAX	013G4281 – white finishing RAL9016 013G4279 – chromium plated finishing	
Heimeier Multilux	3851-02.000 3850-02.000	as for the panel radiators with a valve insert
Herz	1 3692 91 1 3694 91	1 9260 06, 1 7260 06, 1 9200 60, 1 7260 40
Honeywell Therafix	V2474YE0015 V2474YD0015	as for the panel radiators with a valve insert
Oventrop Multiblock T	118 40 83 118 40 84	as for the panel radiators with a valve insert
Schlosser Duo-plex	6021 00001, 6021 00003, 6021 00005, 6021 00007	as for the panel radiators with a valve insert



mounting distances

The distances from the radiator to the floor and to the cill board should be at least 100 mm. If maintaining these distances is not possible, they can be reduced to 70-100 mm from the floor and the cill board, provided the heat output of the radiator is increased by 5-10%. If these distances are smaller than 70 mm, lower height radiators must be used. The radiator must be installed in its factory packaging. If the heating system is used for heating during finishing works or for drying, the radiator should stay in its packaging. If the packaging

was destroyed, the radiator must be protected from fouling in some other way. It is recommended to remove the packaging after the completion of all finishing works. Pipe branches should be shaped in a manner preventing any stress from occurring after connecting and fastening of fittings. Bending of the pipe branch with a radiator installed, heating the radiator with a burner or a blowtorch and performing other activities imposing a risk of deformation of the radiator or its paint coating is not allowable.

Accessories

description



a set of brackets for the panel radiators with hanging lugs and the height of 300 - 900 mm - types:

**C 11, C 21s, C 22, C 33 • CV 11 • CVM 11 • FC 11, FC 21s, FC 22, FC 33
FCV 11 • FCVM 11 • RC 11, RC 21s, RC 22, RC 33 • RCV 11 • RCVM 11**

Radiator-to-wall distance – 30 mm.

Maximal load of a single bracket:

vertically – 120 kg

pulling – 60 kg

panel radiator length mm	quantity of brackets
400 - 1600	2
1800 - 3000	3

Bundled with the radiator



a set of the Monclac MCA-D rail brackets for the panel radiators without hanging lugs and the height of 300 - 900 mm - types:

**CV 21s, CV 22, CV 33 • CVM 21s, CVM 22, CVM 33
FCV 21s, FCV 22, FCV 33 • FCVM 21s, FCVM 22, FCVM 33
RCV 21s, RCV 22, RCV 33 • RCVM 21s, RCVM 22, RCVM 33**

Radiator-to-wall distance – 25 mm.

Maximal load of a single bracket:

vertically – 180 kg

pulling – 35 kg

panel radiator length mm	quantity of brackets
400 - 1600	2
1800 - 3000	3

Bundled with the radiator



a set of the Monclac MCK-108 for the panel radiators - types:

**H 10, H 20, H 30 • HV 10, HV 20, HV 30 • FH 10, FH 20, FH 30
FHV 10, FHV 20, FHV 30**

Outreach of the MONCLAC MCK type brackets – 108 mm.

Maximal load of a single bracket MONCLAC MCK – 108:

vertically – 125 kg

pulling – 35 kg

To be ordered separately



floor brackets for the 21s, 22, 33 type panel radiators and the height of 300 - 900 mm:

Radiator-to-wall distance: any

Maximal load of a single column:

vertically – 180 kg

pulling – 35 kg

order code: **AZ02BS1WEM817H01** (1 pc)

height 300 - 600 mm		height 900 mm	
panel radiator length mm	quantity of floor brackets	panel radiator length mm	quantity of floor brackets
400 - 1800	2	400 - 1200	2
2000 - 2300	3	1400 - 1800	3
2600 - 3000	4	2000 - 3000	4



the PURMO-AIR ventilation set for the panel radiators with convection fins:

AIR 21 - ventilation set casing (use with the 21 type)

order code: **AZ28VVAIR2100000**

AIR 22 - ventilation set casing (use with the 22 and 33 type)

order code: **AZ28VVAIR2200000**

AIRF 200 - F9 class air filter. Matches every casing type

order code: **AZ28VVAIRF2000000**

Ventilation set must contain a casing appropriate for the radiator + a filter.

NOTE! Do not use with the mid-connection panel radiators.

Accessories

description



a set of the Monclac MCA-D rail brackets for the panel radiators without hanging lugs and the height of 200 mm - types: CV 21s, CV 22 • FCV 21s, FCV 22 • RCV 21s, RCV 22

height 200 mm	
panel radiator length mm	quantity of brackets
600 - 1600	2
1800 - 2300	3
2600 - 3000	4

order code:
AZ02BW2MC2002201 (2 pcs in the set)

and
order code:
AZ02BW3MC2002201 (3 pcs in the set)



the Monclac MCA-Q type 33 for the panel radiators without hanging lugs and the height of 200 mm – types: CV33 • FCV33 • RCV33

height 200 mm	
panel radiator length mm	quantity of brackets
600 - 1600	2
1800 - 2300	3
2600 - 3000	4

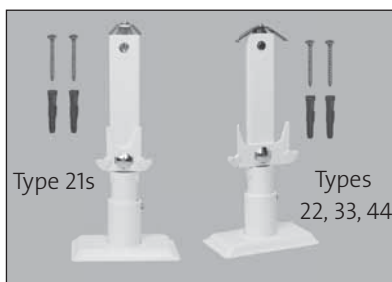
order code:
AZ02BW1MC2003301 (1 pc)



the Monclac MCA-Q type 44 for the panel radiators without hanging lugs and the height of 200 mm – types: CV44 • FCV44 • RCV44

height 200 mm	
panel radiator length mm	quantity of brackets
600 - 1600	2
1800 - 2300	3
2600 - 3000	4

order code:
AZ02BW1MC2004401 (1 pc)



Type 21s

Types 22, 33, 44

order code:
AZ02B51200215001

order code:
AZ02B51200224401

the floor brackets for the panel radiators of height 200 mm:

CV 21s, CV 22, CV 33, CV 44 • FCV 21s, FCV 22, FCV 33, FCV 44
FFCV 21s, FFCV 22, FFCV 33, FFCV 44 • RCV 21s, RCV 22, RCV 33, RCV 44
RRCV 21s, RRCV 22, RRCV 33, RRCV 44

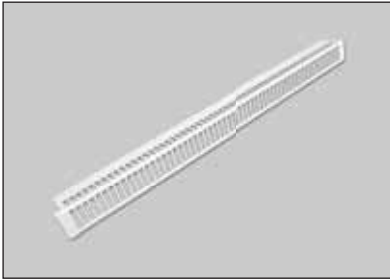

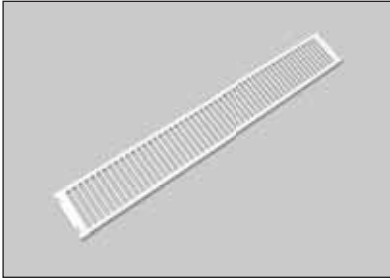
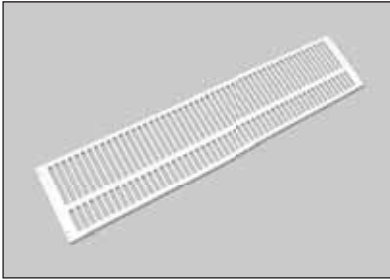
Radiator-to-wall distance: any.
Maximal load of a single column:
vertically – 200 kg
pulling – 35 kg

height 200 mm	
panel radiator length mm	quantity of floor brackets
600 - 1600	2
1800 - 2300	3
2600 - 3000	4

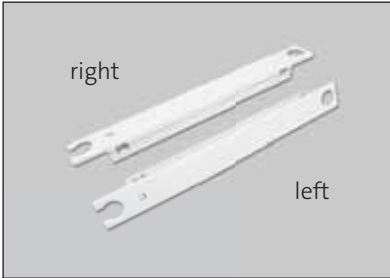

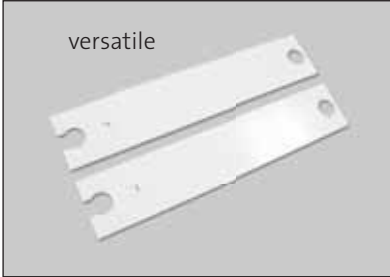
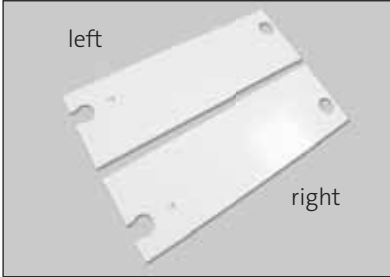
application range of wall and floor brackets for the panel radiators of height 200 mm:

panel radiator	type 21s		type 22		type 33		type 44	
	wall-mounted	floor-mounted	wall-mounted	floor-mounted	wall-mounted	floor-mounted	wall-mounted	floor-mounted
Ventil Compact	x	x	x	x	x	x	x	x
Plan Ventil Compact	x	x	x	x	x	x	x	x
Ramo Ventil Compact	x	x	x	x	x	x	x	x
Plan Ventil Compact D		x		x		x		x
Ramo Ventil Compact D		x		x		x		x

Accessories


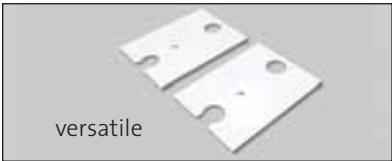
	description	order code
	Purmo top grille for type 11 40 cm 50 cm 60 cm 70 cm 80 cm 90 cm 100 cm 110 cm 120 cm 140 cm 160 cm 180 cm 200 cm 230 cm 260 cm 300 cm	A06110000401TG00 A06110000501TG00 A06110000601TG00 A06110000701TG00 A06110000801TG00 A06110000901TG00 A06110001001TG00 A06110001101TG00 A06110001201TG00 A06110001401TG00 A06110001601TG00 A06110001801TG00 A06110002001TG00 A06110002301TG00 A06110002601TG00 A06110003001TG00
	Purmo top grille for type 21s 40 cm 50 cm 60 cm 70 cm 80 cm 90 cm 100 cm 110 cm 120 cm 140 cm 160 cm 180 cm 200 cm 230 cm 260 cm 300 cm	A06210000403TG00 A06210000503TG00 A06210000603TG00 A06210000703TG00 A06210000803TG00 A06210000903TG00 A06210001003TG00 A06210001103TG00 A06210001203TG00 A06210001403TG00 A06210001603TG00 A06210001803TG00 A06210002003TG00 A06210002303TG00 A06210002603TG00 A06210003003TG00
	Purmo top grille for type 22 40 cm 50 cm 60 cm 70 cm 80 cm 90 cm 100 cm 110 cm 120 cm 140 cm 160 cm 180 cm 200 cm 230 cm 260 cm 300 cm	A06220000401TG00 A06220000501TG00 A06220000601TG00 A06220000701TG00 A06220000801TG00 A06220000901TG00 A06220001001TG00 A06220001101TG00 A06220001201TG00 A06220001401TG00 A06220001601TG00 A06220001801TG00 A06220002001TG00 A06220002301TG00 A06220002601TG00 A06220003001TG00
	Purmo top grille for type 33 40 cm 50 cm 60 cm 70 cm 80 cm 90 cm 100 cm 110 cm 120 cm 140 cm 160 cm 180 cm 200 cm 230 cm 260 cm 300 cm	A06330000401TG00 A06330000501TG00 A06330000601TG00 A06330000701TG00 A06330000801TG00 A06330000901TG00 A06330001001TG00 A06330001101TG00 A06330001201TG00 A06330001401TG00 A06330001601TG00 A06330001801TG00 A06330002001TG00 A06330002301TG00 A06330002601TG00 A06330003001TG00

Accessories



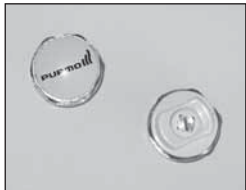


	description	order code
	Purmo side panel for type 11 30 cm right 30 cm left 40 cm right 40 cm left 45 cm right 45 cm left 50 cm right 50 cm left 55 cm right 55 cm left 60 cm right 60 cm left 90 cm right 90 cm left	A06110300001SP00 A06110300001SP10 A06110400001SP00 A06110400001SP10 A06110450001SP00 A06110450001SP10 A06110500001SP00 A06110500001SP10 A06110550001SP00 A06110550001SP10 A06110600001SP00 A06110600001SP10 A06110900001SP00 A06110900001SP10
	Purmo side panel for type 21s 20 cm 30 cm 40 cm 45 cm 50 cm 55 cm 60 cm 90 cm	A06210200003SP00 A06210300003SP00 A06210400003SP00 A06210450003SP00 A06210500003SP00 A06210550003SP00 A06210600003SP00 A06210900003SP00
	Purmo side panel for type 22 20 cm 30 cm 40 cm 45 cm 50 cm 55 cm 60 cm 90 cm	A06220200001SP00 A06220300001SP00 A06220400001SP00 A06220450001SP00 A06220500001SP00 A06220550001SP00 A06220600001SP00 A06220900001SP00
	Purmo side panel for type 33 20 cm right 20 cm left 30 cm right 30 cm left 40 cm right 40 cm left 45 cm right 45 cm left 50 cm right 50 cm left 55 cm right 55 cm left 60 cm right 60 cm left 90 cm right 90 cm left	A06330200001SP00 A06330200001SP10 A06330300001SP00 A06330300001SP10 A06330400001SP00 A06330400001SP10 A06330450001SP00 A06330450001SP10 A06330500001SP00 A06330500001SP10 A06330550001SP00 A06330550001SP10 A06330600001SP00 A06330600001SP10 A06330900001SP00 A06330900001SP10

	description	type	dimensions	order code:
	towel rail for the PURMO Vertical radiators. Colour: RAL 9016 white.	20C, 21C, 22C	300 mm 450 mm 600 mm 750 mm	AZ04TRV590300000 AZ04TRV590450000 AZ04TRV590600000 AZ04TRV590750000









Accessories

	description	order code
	Purmo top grille for type 44 60 cm 70 cm 80 cm 90 cm 100 cm 110 cm 120 cm 140 cm 160 cm 180 cm 200 cm 230 cm 260 cm 300 cm	A06440000601TG00 A06440000701TG00 A06440000801TG00 A06440000901TG00 A06440001001TG00 A06440001101TG00 A06440001201TG00 A06440001401TG00 A06440001601TG00 A06440001801TG00 A06440002001TG00 A06440002301TG00 A06440002601TG00 A06440003001TG00
 versatile	Purmo side panel for type 44 20 cm	A06440200001SP00



	description	dimensions	order code
	Thermostatic head Purmo Sensor	M30x1.5	AZ02HESENSOM3030
	key for pre-setting		AZ02ZZKLUNASOV00
	blind plug and air-vent		AZ02PLP400000000
	assembly set for bottom connected radiators		AZ02ZZSZABLONG01
	radiator connection valve double, straight, nickel plated	$\frac{3}{4}$ " by $\frac{1}{2}$ "	AZ03TP004001300SNICK
	radiator connection valve double, angle, nickel plated	$\frac{3}{4}$ " by $\frac{1}{2}$ "	AZ03TP004001290SNICK

Accessories

	description	dimensions	order code
	touch up paint RAL 9016		AZ03PA0070901630
	spray RAL 9016		AZ02PASPRAYWHI0R9016
	valve insert - new model (no: 165 11 62) for panel radiators with bottom connections - production started from the beginning of 2011 Colour: white Initial presetting:: 2 (kv=0.13) Presetting range: 1 - 6 (kv=0.05 to 0.70)		AZ02VEOV013WHI00
	valve insert - new model (no: 165 11 63) for panel radiators with bottom connections - production started from the beginning of 2011 Colour: black Initial presetting:: 3 (kv=0.27) Presetting range: 1 - 6 (kv=0.05 to 0.70)		AZ02VEOV027BLA00
	valve insert - new model (no: 165 11 64) for panel radiators with bottom connections - production started from the beginning of 2011 Colour: green Initial presetting:: 4 (kv=0.42) Presetting range: 1 - 6 (kv=0.05 to 0.70)		AZ02VEOV042GRE00
	valve insert - new model (no: 165 11 65) for panel radiators with bottom connections - production started from the beginning of 2011 Colour: blue Initial presetting:: 5 (kv=0.56) Presetting range: 1 - 6 (kv=0.05 to 0.70)		AZ02VEOV056BLU00
	valve insert - new model (no: 165 11 66) for panel radiators with bottom connections - production started from the beginning of 2011 Colour: red Initial presetting:: 6 (kv=0.70) Presetting range: 1 - 6 (kv=0.05 to 0.70)		AZ02VEOV070RED00
	valve insert - former model (no: 101 80 80) for panel radiators with bottom connections - production stopped at the end of 2010. Colour: black Initial presetting:: 6 (kv=0.70) Presetting range: 1 - 6 (kv=0.05 to 0.70) NOTE: The new models of valve inserts cannot be replaced by the former ones (and vice versa) due to some construction differences of their bodies.		AZ02VEO101808000

Purmo radiators in special versions

Conditions for using the PURMO steel panel radiators contained in technical files and warranty conditions expressly and clearly specify the types of spaces for installation of regularly protected panel radiators without the loss of warranty.

For rooms where standard panel radiators are not recommended due to adverse conditions which would cease the warranty, special versions of radiators are available.

These are the **C, CV, CVM** and **H** and **HV** radiator types, in versions with additional rustproofing applied onto radiators' surfaces before final painting, designed primarily for rooms with elevated moisture levels, such as: car washes, laundries, bathrooms, public conveniences and others, where adverse influence of moisture present in the air – and other corrosives – is possible to occur.

The surface proofing process is based on hot dip zinc coating and is one of the most important processes in the entire production cycle of radiators. It is an immersion method, which means that both surface preparation and zinc coating are done by immersing radiators in dedicated baths of specific mixture of chemicals. This technology enables total penetra-

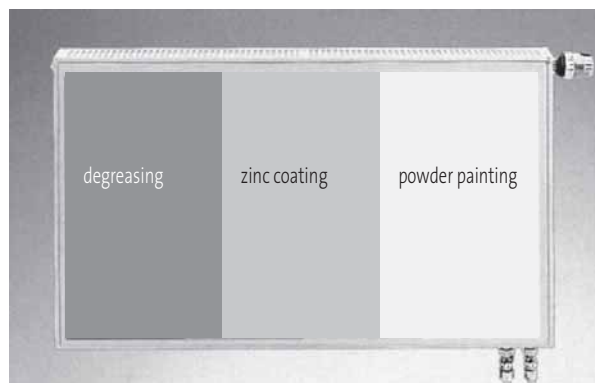
tion of the protective zinc coating into every unevenness on the surface, and precise protection against corrosion. Operating temperature of the baths reaches approx. 450°C. Zinc-coated radiators are then finally painted with RAL 9016 white paint in the structural version, where the outermost layer resembles orange peel.

Purmo **C, CV, CVM** and **H** and **HV** radiators with additional rustproofing are available to order in the same height series as regular ones, that is from 300 to 900 mm, and lengths from 400 to 3000 mm. Radiator brackets for special versions are also manufactured with additional rustproofing.

The special, galvanized models of radiators are available for additional surcharge in comparison to the same size standard versions.

Heat output of these radiators is the same regardless of version: standard or with the additional protection.

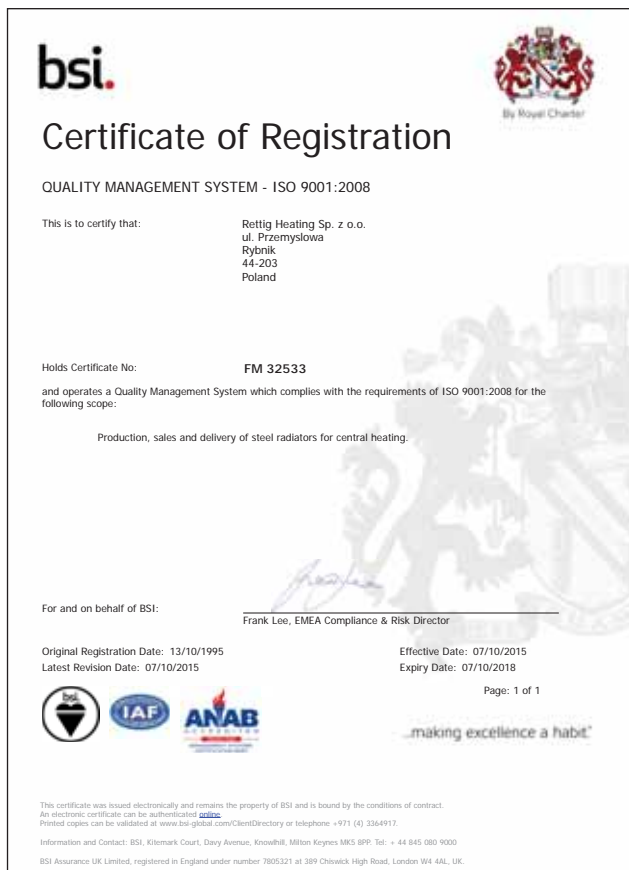
The special versions of radiators installed in spaces with increased moisture content are covered by a **6 year warranty**.



Radiator surface preparation

About our company

The integrated quality and environmental management system in accordance with ISO 9001 and ISO 14001 implemented in our company are certified by the British Standards Institution.



Rettig Heating.

This company of the Finnish origin is the biggest manufacturer of radiators in Poland and Europe. High quality materials and a partnership backed by actions are the key to our company success. Our radiators proved themselves in the tough climate of Northern Scandinavia. Throughout 50 years of our operation we have earned recognition on the European markets as well as in countries on other continents.

This allows us to provide services for small undertakings with commitment as high as for large ones. The Rettig Heating

company owes its image to the Polish managers and engineers. Experienced and highly qualified regional managers maintain constant contact with sales units, designers, fitters and investors while caring for the top quality of customer service.

In Poland, we currently employ over 300 employees. We invest in our future staff by cooperating with academic centres in the country. We organize training for designers and fitters. All of this we do, because we care for the satisfaction of our customer who can always count on us.

Purmo colour palette

STANDARD COLOUR

RAL 9016 Traffic white

All prices presented in this brochure refer to products painted in a standard colour RAL 9016. Other RAL and special colours are available on request.

Surcharges for other RAL and special colours from the palette presented below:

+40 % - all panel radiators (excluding Vertical)

+20 % - Vertical

Surcharges for other RAL and special colours out of the palette presented below:

+100 % - all panel radiators (excluding Vertical)

+50 % - Vertical

RAL COLOURS

RAL 1004 Golden yellow	RAL 1012 Lemon yellow	RAL 1023 Traffic yellow	RAL 1027 Curry yellow	RAL 1033 Dahlia yellow	RAL 2003 Pastel orange	RAL 2004 Pure orange	RAL 3000 Flame red
RAL 3005 Wine red	RAL 3014 Antique pink	RAL 3015 Light pink	RAL 4002 Red violet	RAL 4007 Purple violet	RAL 4008 Signal violet	RAL 4009 Pastel violet	RAL 5001 Green blue
RAL 5002 Ultramarine blue	RAL 5009 Azure blue	RAL 5014 Pigeon blue	RAL 5015 Sky blue	RAL 5017 Traffic blue	RAL 5022 Night blue	RAL 6004 Blue green	RAL 6019 Pastel green
RAL 6033 Mint turquoise	RAL 6034 Pastel turquoise	RAL 7001 Silver grey	RAL 7013 Brown grey	RAL 7015 Slate grey	RAL 7016 Anthracite grey	RAL 7021 Black grey	RAL 7024 Graphite grey
RAL 7030 Stone grey	RAL 7035 Light grey	RAL 7037 Dusty grey	RAL 7040 Window grey	RAL 8017 Chocolate brown	RAL 8019 Grey brown	RAL 9001 Cream	RAL 9005 Jet black
RAL 9006 White aluminium	RAL 9007 Grey aluminium	RAL 9010 Pure White	RAL 040 80 05 Caffé Latte (S0222)	RAL 120 70 70 E-Green (S0221)	RAL 120 80 60 Modern green (S0220)	RAL 150 60 60 Green Apple (S0219)	RAL 250-2 Lemon Glow (S0182)
RAL 290 40 45 Mystic Purple (S0185)	RAL 290 70 20 Mauve Haze (S0178)						

SPECIAL COLOURS

S0075 Jasmine	S0077 Magnolia	S0084 Anemone	S0087 Bahama beige	S0088 Manhattan	S0091 Pergamon	S0094 Natura	S0164 Banana
S0102 Metal Grey ²	S0104 Metal Black ²	S0141 Black Textured ¹	S0142 White Textured ¹	S0143 Light Grey	S0144 Brown Grey	S0145 Creme White	S0146 Anodic Bronze
S0147 Anodic Brown	S0148 Anodic Black	S0149 Anodic Natura	S0201 Metal Alu ²				

¹ textured colour

² metallic colour

Colours presented here should be considered as demonstrative. Before purchase, the colours should be selected based on the original colour chart only. The manufacturer is not responsible for the selection of colours based on materials printed or displayed on a computer display.

NOTE!!! Different types of radiators can have different shades of the same colour.

www.purmo.com

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