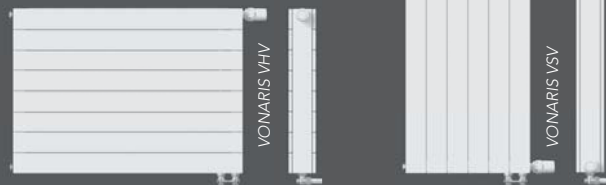
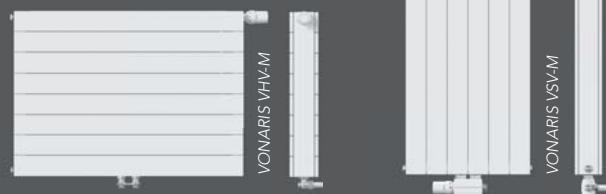


VONARIS solitary finished radiator



Product description	248
Model overview /	
VHV connection dimensions	249
WVO design	250
Model overview /	
VSV connection dimensions	251
Connection modes	252
Heat reflector	254
Fastening systems	255
Heating outputs	262

VONARIS-M Centrally connected radiator



Product description	265
Model overview / VHV-M	
connection dimensions /	
WVO design	266
Model overview / VSV-M	
connection dimensions	267
Two-pipe operation	268
Single-pipe operation	271
Fastening systems	273
Heating outputs	280

KONTEC convectors and heating panels



Product description	284
Model overview /	
KK connection dimensions	285
WVO design	286
Model overview /	
KH connection dimensions	287
Model overview /	
KS connection dimensions	288
Connection modes	289
Heat reflector	292
Fastening systems	293
Heating outputs	299
Replacement radiators	303

Calculation table	305
Installation dimensions	306
Guide for	
Fastening systems	310

Basics

INTRATHERM Trench convectors

from page 315



FMK

F1T

F1P



ULOW-E2

Profile panel radiators

Plan panel radiators

Vertical radiators



General information

Preformed plate system

Stapler system

Special systems



Towel warmers

Design radiators



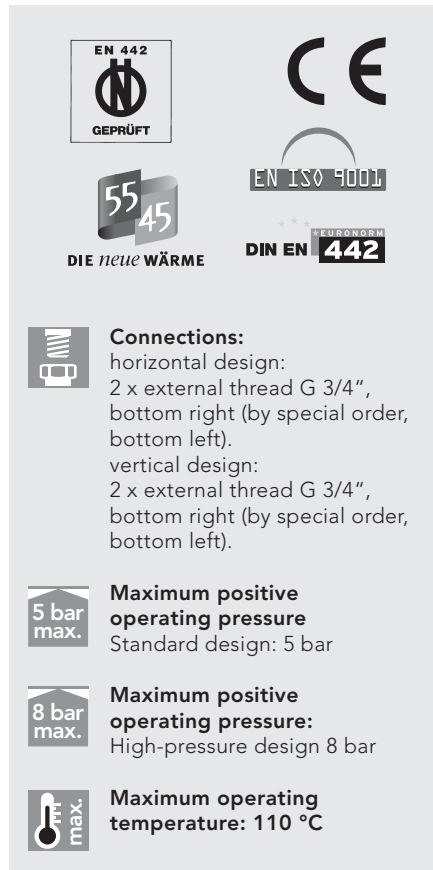
Standard Column radiators





Centrally connected Column radiators


Architecture Column radiators





VONARIS SOLITARY FINISHED RADIATORS.











DIE neue WÄRME


Connections:
 horizontal design:
 2 x external thread G 3/4",
 bottom right (by special order,
 bottom left).
 vertical design:
 2 x external thread G 3/4",
 bottom right (by special order,
 bottom left).


Maximum positive operating pressure
 Standard design: 5 bar


Maximum positive operating pressure:
 High-pressure design 8 bar


Maximum operating temperature: 110 °C



VONARIS: the solitary finished radiator in a fully welded horizontal design, with 1 to 4 layers of steel rectangular water-flow pipes arranged one-behind-the-other, each layer consisting of from 2 to 11 pipes arranged one-above-the-other.

Vertical design: with 1 or 2 layers of steel rectangular water-flow pipes, arranged one-behind-the-other, each layer consisting of from 3 to 12 steel pipes, arranged side-by-side. A 2 mm space between the heating pipes guarantees additional resistance to corrosion. VONARIS solitary finished radiators are equipped with a built-in valve set, suitable for either double-pipe or single-pipe operation, using a one-pipe manifold, with a factory-fitted valve (already installed) and protective cap.

VONARIS solitary finished radiators will normally be delivered with side panels. The horizontal design is also equipped with a top cover. VONARIS solitary finished radiators, are not delivered with brackets as standard (exception: VHV 11, overall height 358 to 790 mm, does include brackets). For the vertical de-

sign, brackets are included. The VONARIS solitary finished radiator comes with a drain plug and a pivoting vent plug (with the vertical design, a dummy plug too), all of them factory-sealed. VONARIS solitary finished radiators are Design radiators that are just waiting to be connected.

Standard design: rectangular steel pipes, 70 x 11 x 1.5 mm
 High-pressure design: rectangular steel pipes, 70 x 11 x 2.0 mm

WVO design: models 22, 34 and 47 (in the horizontal design and up to an overall height of 286 mm) are also available with a rear-welded heat reflector (no water-flow). The VHV 20 model (at overall heights of 358 to 574 mm), and the VHV 22 model (overall heights 358 to 646 mm) may have a heat reflector fitted subsequently.

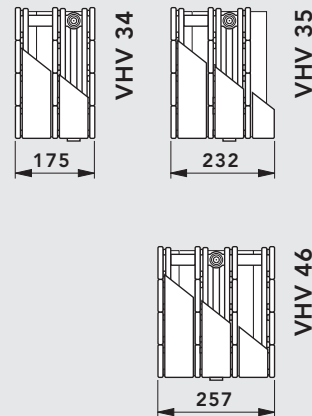
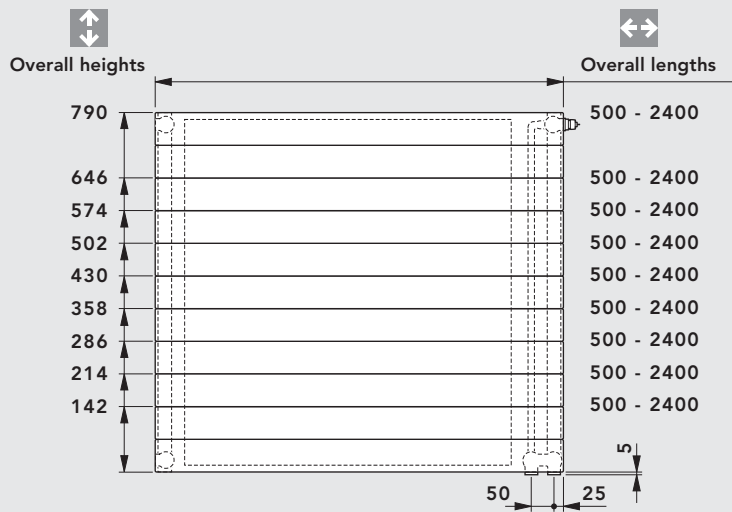
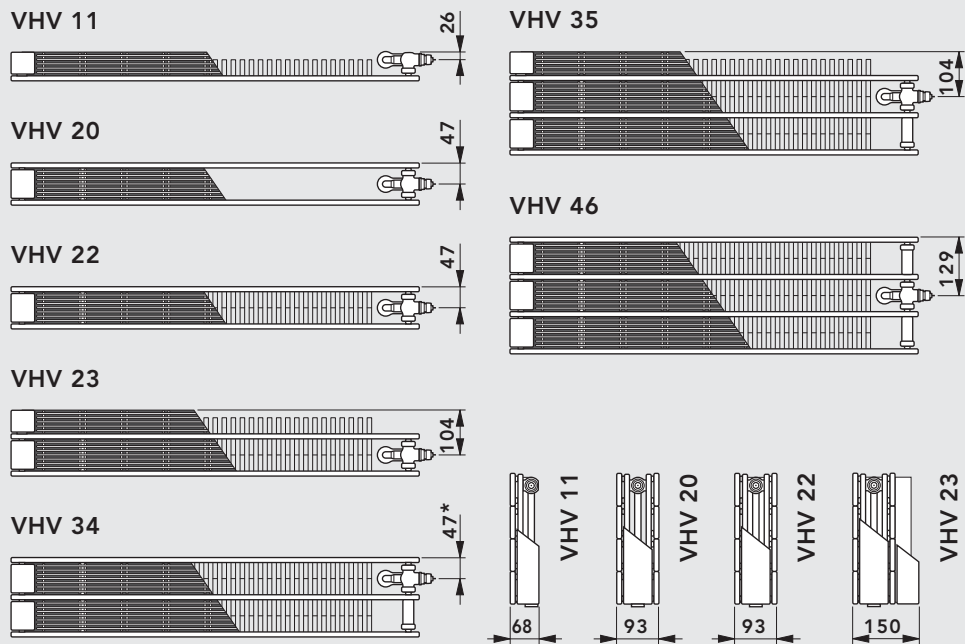
Dimensions:
 Horizontal design: overall lengths between 500 mm and 1400 mm are available (at increments of 100 mm), and between 1600 and 4000 mm (at

increments of 200 mm).
 Horizontal design: the available overall heights are 142, 214, 286, 358, 430, 502, 574, 646, and 790 mm.
 Vertical design: overall lengths between 214 and 862 mm are available (at increments of 72 mm)
 Vertical design: overall heights of 1600, 1800, and 2000 mm are available.

Coatings:
 1. Undercoat: electrophoretic, using water-soluble paints, conforming to DIN 55900 part 1, stoved at 165° C;
 2. Finish: electrostatic powder coating, conforming to DIN 55900 part 2, in a state-of-the-art facility. (On request, and at a supplementary charge, a range of RAL and sanitary ware colours can be offered.) This particularly robust coating is stoved at an object temperature of 180° C.

Packaging:
 1. Cardboard packaging
 2. Edge protection
 3. Shrink foil

Horizontal design, VHV models



Schematic diagram

* Please note: If the VHV 34 model is turned and used as a left-hand design, the distance between the VONARIS rear panel and the connection point is 129 mm.

Model	VHV 11				VHV 20				VHV 22				VHV 23	VHV 34		VHV 35		VHV 46		
Overall height	214	286	358	430	142	214	286	358	430	142	214	286	358	430	142	214	142	214	142	214
Overall height [mm]	502	574	646	790	502	574	646	790		502	574	646	790	286		286		286		286
Overall length [mm]	500 - 2400 mm (for special overall lengths see output tables)																			
Increments	100 mm (for overall lengths of 1400 mm and above: 200 mm)																			

- 1 ULOW-E2
Profile panel radiators
Plan panel radiators
Vertical radiators
- 2 General information
Preformed plate system
Stapler system
Special systems
- 3 Towel warmers
Design radiators
- 4 Standard Column radiators
Centrally connected Column radiators
- 5 Architecture Column radiators

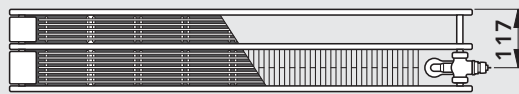
The VHV-S models

With their factory-welded heat reflector (no water-flow), the WVO designs return a major part of the otherwise lost heat to the room. They do so by

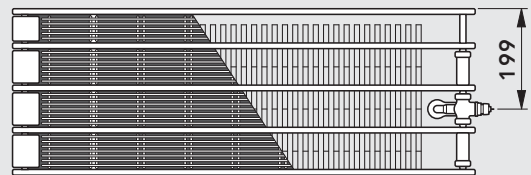
means of convection between radiator and heat reflector.

Model overview / connection dimensions: horizontal design, VHV-S models

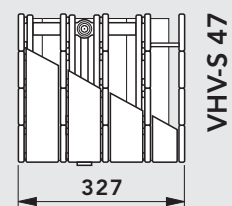
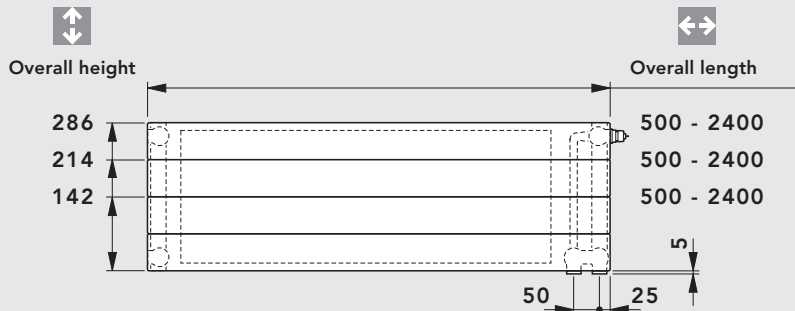
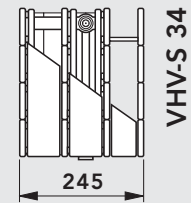
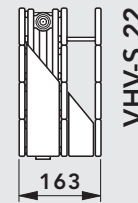
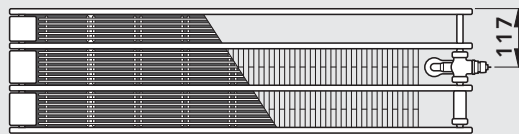
VHV-S 22



VHV-S 47



VHV-S 34

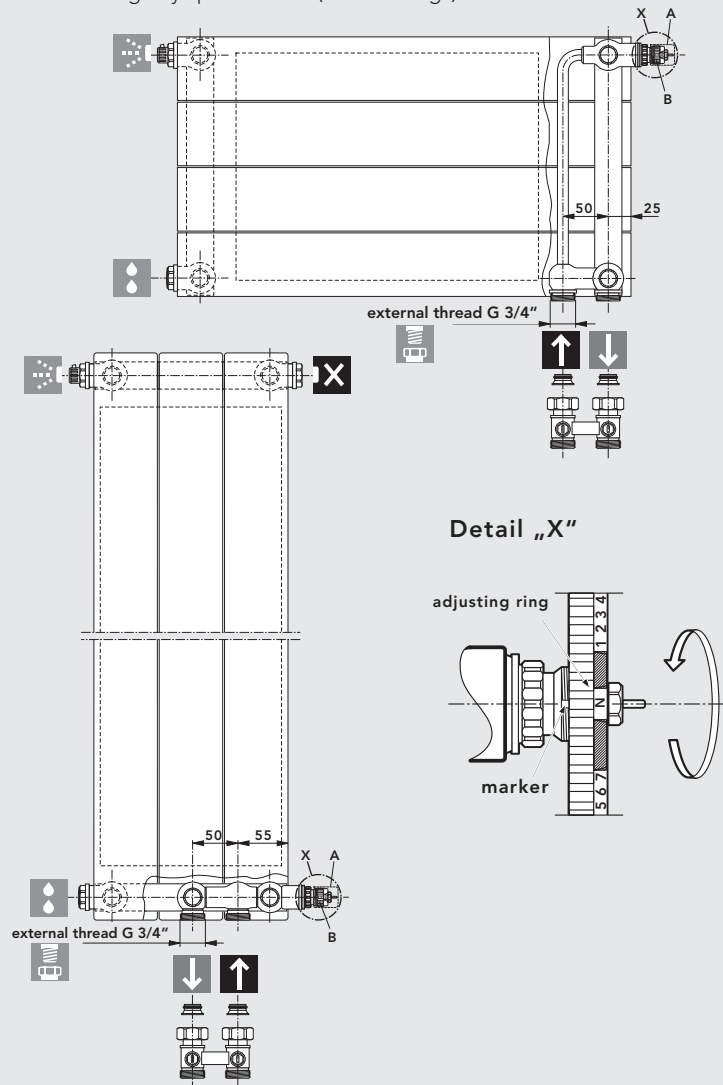


Schematic diagram

Model	VHV-S 22			VHV-S 34			VHV-S 47		
Overall height ↑ ↓ [mm]	142	214	286	142	214	286	142	214	286
Overall length ← → [mm]	500 - 2400 mm (for special overall lengths see output tables)								
Increments	100 mm (for overall lengths of 1400 mm and above: 200 mm)								

Horizontal and vertical designs

It is easy to set the precise values required without using any special tools (see drawings).



Schematic diagram

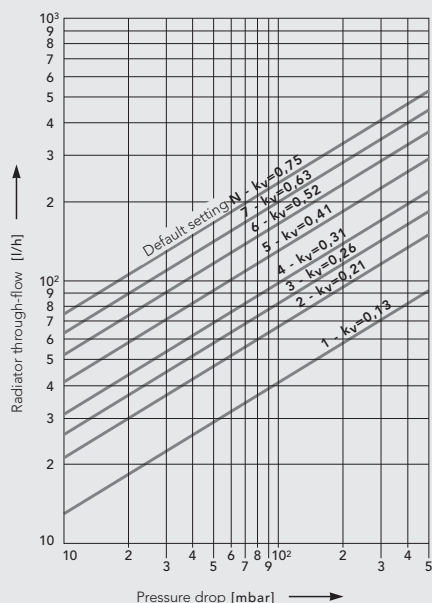


Chart 1:

Pressure drop [mbar] – double-pipe operation at 2K proportional offset.

It is of course possible to adjust the valve default setting, whilst there is pressure in the heating system.

The radiator will be delivered with a fitted protective cap. After removing the protective cap (item A), the following thermostat heads can be installed directly onto the built-in valve (item B): „RA 2000“, or „RAW“ from Danfoss, „VK“ from Heimeier, „D“ from Herz, „thera DA“ from MNG, and „UNI XD“ from Oventrop.

Adjustment tips:

- Remove protective cap and sensor
- Lift the adjusting ring and turn it anti-clockwise, to the setting required – the set value (1, 2, ...7, N) needs to be directly in line with the marker.
- Presetting is possible in steps of 0.5 between 1 and 7. The „N“ setting, cancels all presetting.

Note: Settings in the hatched areas must be avoided.

Guideline values for default settings

Basis:	
Supply temperature	70 °C
Return temperature	55 °C
Room temperature	20 °C

Default setting **1** $k_v = 0.13$
For radiators up to about 500 W

Default setting **2** $k_v = 0.21$
For radiators up to about 800 W

Default setting **3** $k_v = 0.26$
For radiators up to about 1000 W

Default setting **4** $k_v = 0.31$
For radiators up to about 1200 W

Default setting **5** $k_v = 0.41$
For radiators up to about 1600 W

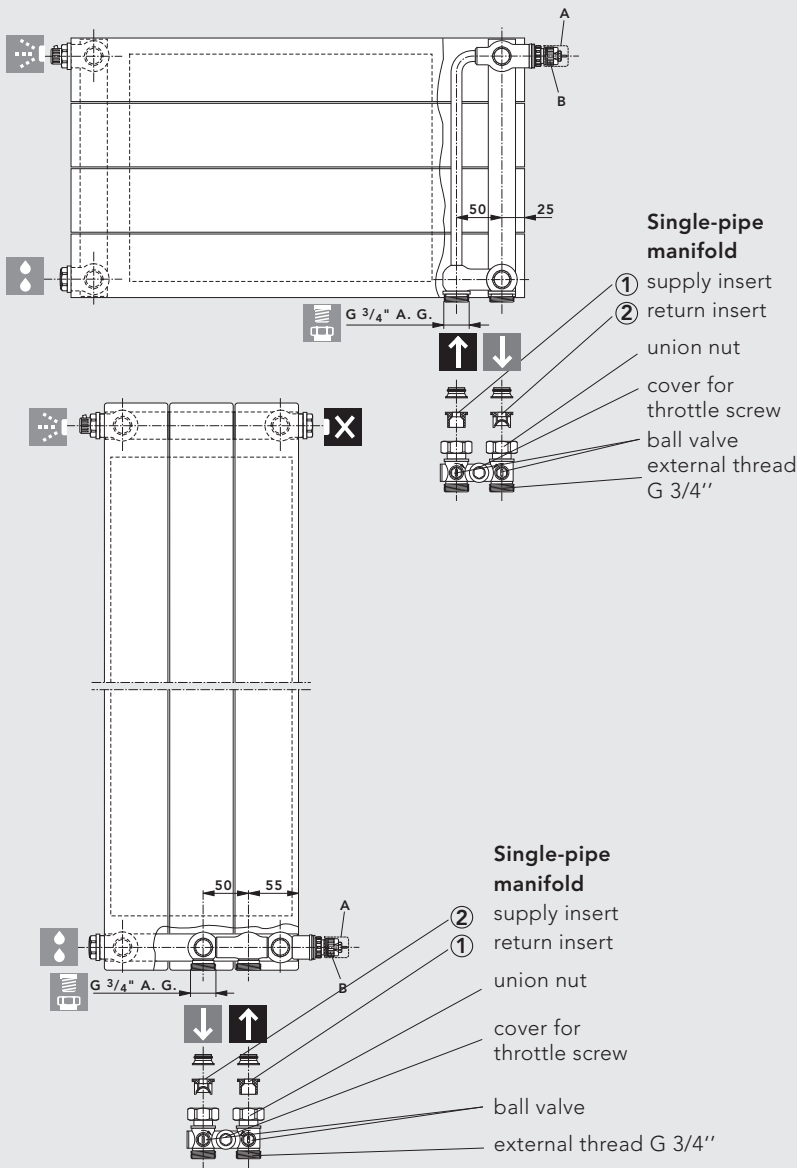
Default setting **6** $k_v = 0.52$
For radiators up to about. 2000 W

Default setting **7** $k_v = 0.63$
For radiators up to about 2400 W

Default setting **N** $k_v = 0.75$
For radiators of more than 2400 W

Horizontal and vertical designs

A valve default setting is not necessary as the valve will be delivered factory-adjusted (default setting N).



Schematic diagram

The radiator will be delivered with a fitted protective cap. After removing the protective cap (item A), the following thermostat heads can be installed directly onto the built-in valve (item B): „RA 2000“, or „RAW“ from Danfoss, „VK“ from Heimeier, „D“ from Herz, „thera DA“ from MNG, and „UNI XD“ from Oventrop.

Please note!

Horizontal design:

During the installation of the single-pipe manifold ensure that the return insert 2 is installed in the water return, and the supply insert 1 in the water supply.

Vertical design:

Prior to the installation of the one-pipe manifold it is essential to swap over the supply insert and the return insert so that the supply insert 1 is installed in the water supply, and the return insert 2 in the water return.

Default setting when using a single-pipe manifold:

radiator proportion 30% --- 3.50 revolutions *

radiator proportion 35% --- 3.00 revolutions *

radiator proportion 40% --- 2.50 revolutions *

radiator proportion 45% --- 2.00 revolutions *

radiator proportion 50% --- 1.75 revolutions *

*... before starting, turn the bypass spindle of the single-pipe manifold to the right as far as it will go.

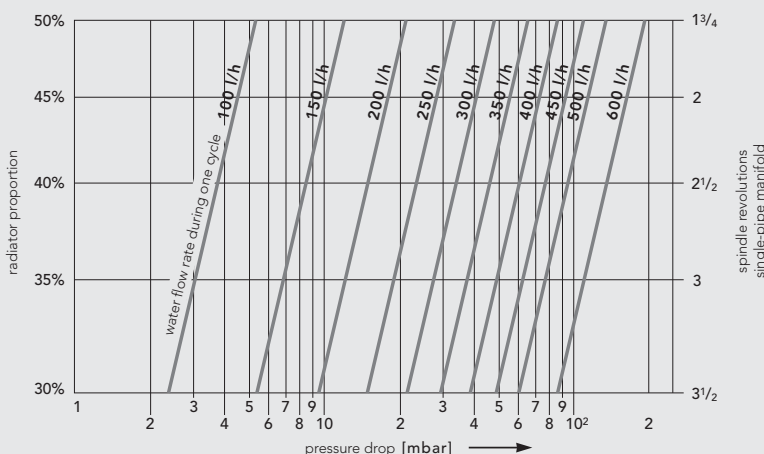
Chart 2:

Pressure drop [mbar] – single-pipe operation with a proportional deviation of 2K.

It is of course possible to change the radiator proportion, whilst there is pressure in the heating system.

Please take account of the maximum power per cycle (for single-pipe installations) of about 10 kW:

$$\Delta T = T_1 - T_2 = 20 \text{ K (at } T_1 = 90 \text{ }^\circ\text{C)}.$$



VHV 20 and VHV 22 models, in horizontal design

The new heat reflector

- is available for the VHV 20 model (OH 358 - 573 mm) and the VHV 22 model (OH 358–646 mm), in horizontal design
- returns a major part of the otherwise lost heat to the room, by means of convection between the VONARIS solitary finished radiator and the heat reflector.

Design:

Electrophoretically coated and finish in RAL 9016 (on request and at an extra charge, available in a range of RAL and Sanitary Ware colours); delivered with 8 push-in brackets, 8 stabilising brackets, 4 Z-brackets, an installation sheet, and packaging

Note:

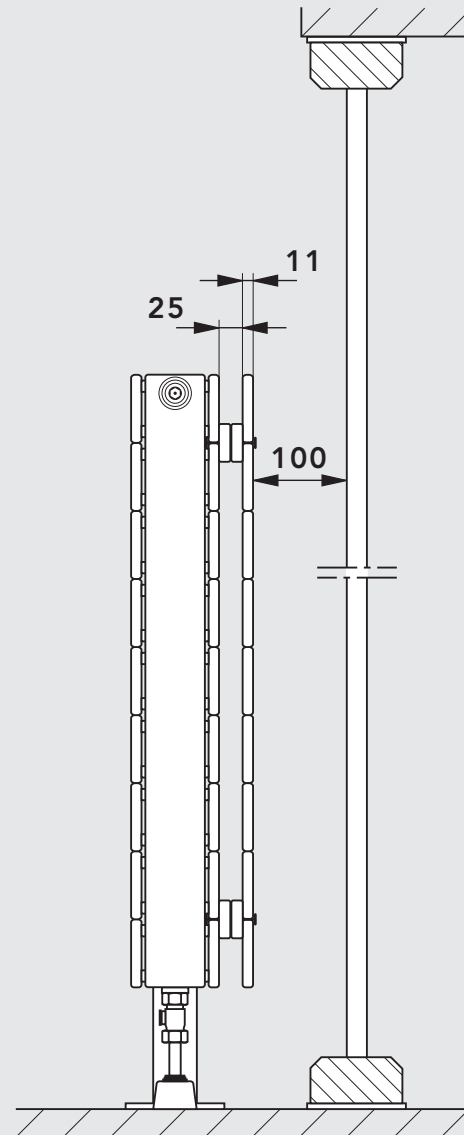
When ordering a horizontal design with heat reflector, it is essential to use the SK 22(VHV 20) or SK 23 (VHV 22) stand consoles.

VONARIS solitary finished radiators with a fitted heat reflector (see diagram right)

Depth: 11 mm heat reflector


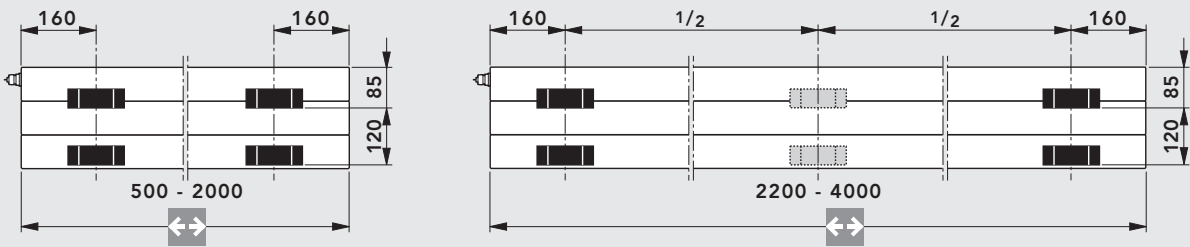

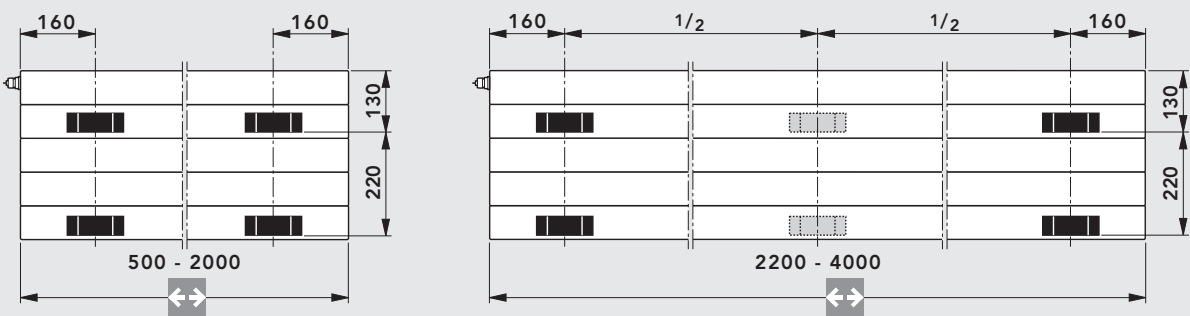

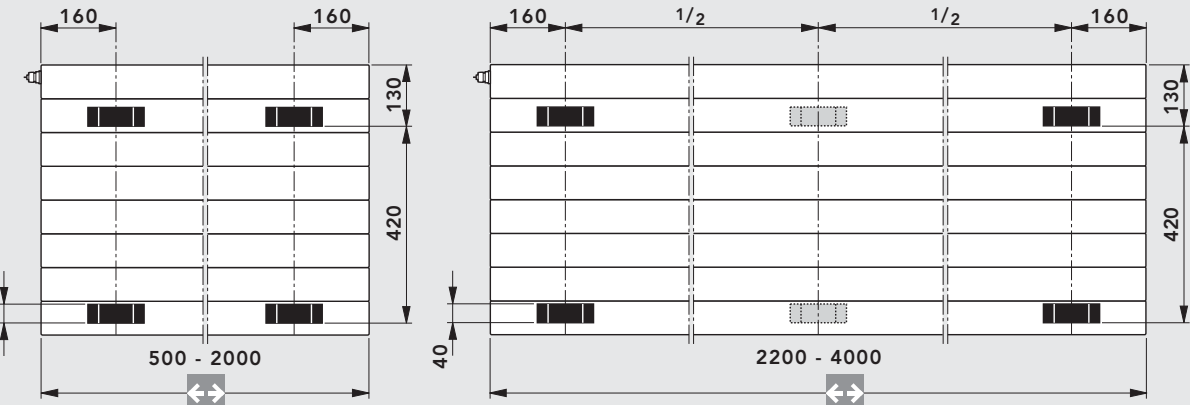
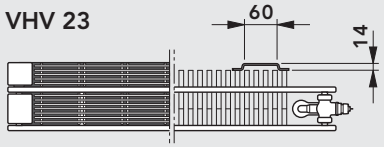
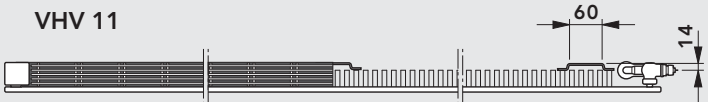
Internal depth: 25 mm between heating pipe and heat reflector

Minimum clearance*: 100 mm between window surface and heat reflector



Schematic diagram

welded bracket positions

Wall mounting WA 11 for models VHV 11 and VHV 23	
Model	Wall mounting WA 11 for VHV 11 or VHV 23
<p>Overall height</p>  <p>from 214 mm to 286 mm</p>	 <p>Note: special order</p>
	VHV 11 for Wall mounting WA 11
<p>Overall height</p>  <p>from 214 mm to 286 mm</p>	
	VHV 11 for Wall mounting WA 11
<p>Overall height</p>  <p>from 214 mm to 286 mm</p>	
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>VHV 23</p>  </div> <div style="text-align: center;"> <p>VHV 11</p>  </div> </div>
	Schematic diagram

VONARIS

Attention! With the horizontal design only the models VHV-M 10/11 (OH 358 - 790 mm) are by default supplied with brackets. If the models VHV-M 20 (OH 358 - 790 mm), VHV-M 22 (OH 214 - 790) and VHV-M 34 (142 - 286 mm) are wall-mounted using wall mounting WA 11, you are required to order these models as a special version, equipped with brackets.

256 VONARIS Wall mounting WA 11

drilling measurements and wall clearance


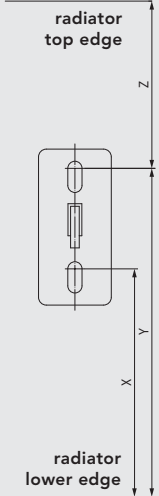
Wall mounting WA 11 for models VHV 11 and VHV 23

Wall mounting WA 11 is suitable for the horizontal versions of the following models: VHV-M 11 (OH 214 - 790 mm) and VHV 23 (OH 214 und 286 mm) equipped with brackets. It ensures easy, rapid and robust mounting of the **VONARIS** central-connection radiators still in the packaging.

Wall mounting WA 11 for BH 214 – 790 mm

Drilling dimensions for wall mounting

Ab einer Overall length von 2200 mm 3 Konsolen

Overall radiator height [mm]		Value X [mm]	Value Y [mm]	Value Z [mm]	Wall mounting WA 11 for BH 214 – 790 mm
214		104	162	52	
286		176	234	52	
358		203	261	97	
430		275	333	97	
502		347	405	97	
574		419	477	97	
646		491	549	97	
790		635	693	97	

Schematic diagram

Connection – wall clearance

	Horizontal design model	Overall height [mm]		Measurement W [mm]
	VHV 11	214 - 790		
VHV 23	214 - 286			123,5

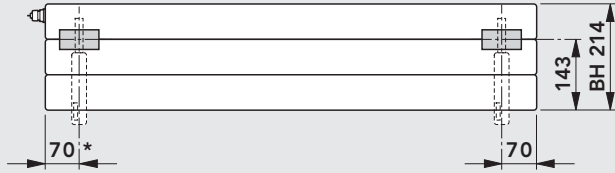
Schematic diagram

positions of the insertion (push-in) brackets

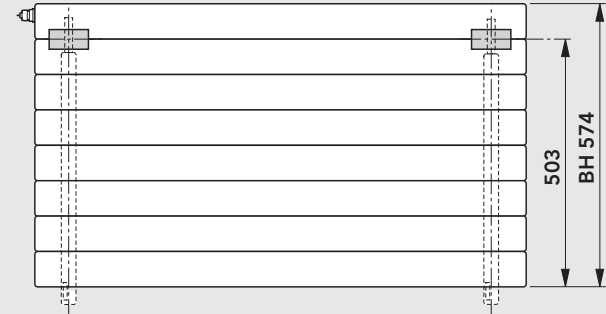
VONOFIX rapid-installation console for the VHV models

VHV 20 and 22 models: OH 214 – 790 mm, VHV 34 model: OH 214 and 286 mm

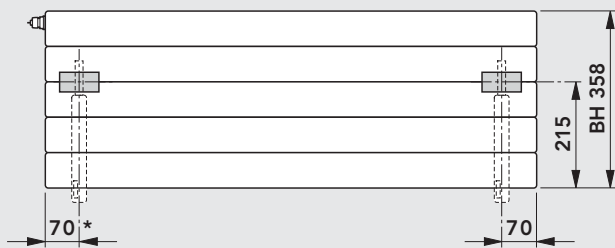
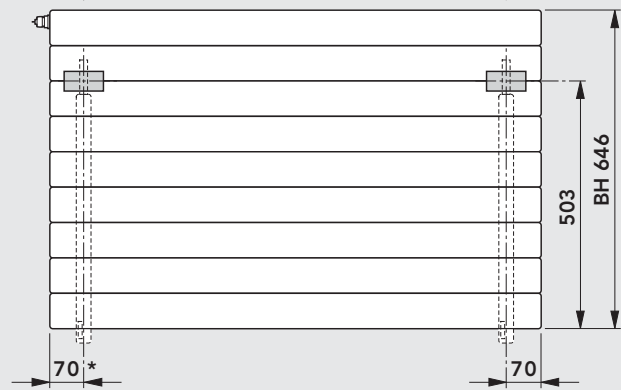
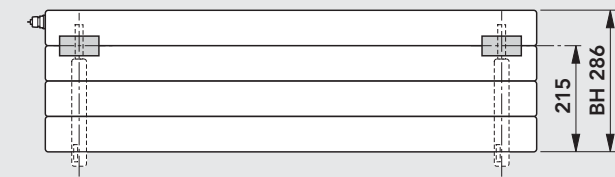
OH 214: for the **VONOFIX 1**



OH 574 and 646: for the **VONOFIX 4**



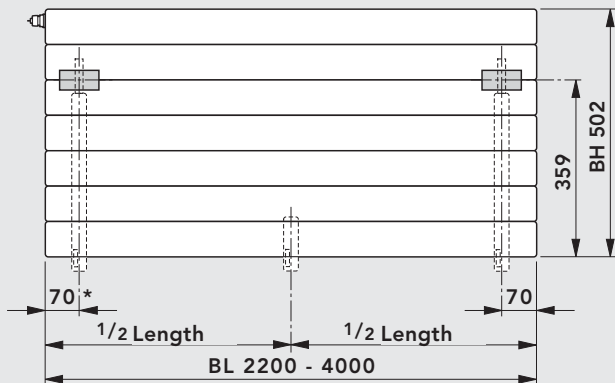
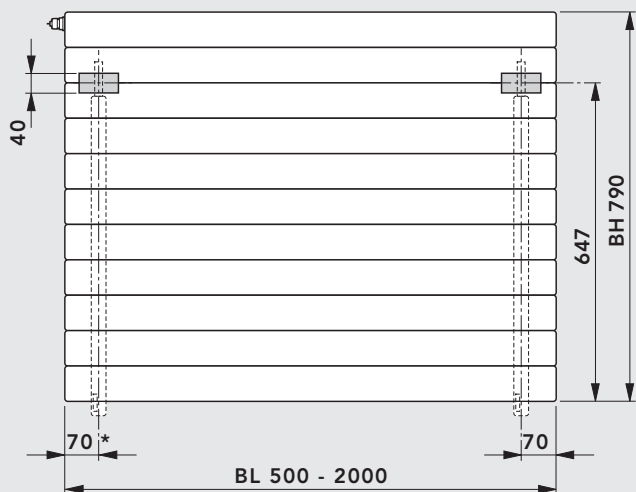
OH 286 and 358: for the **VONOFIX 2**



OH 430 and 502: for the **VONOFIX 3**



OH 790: for the **VONOFIX 5**



Note: for an overall length of 2200 mm and greater an additional piece of foot console must be used!

Schematic diagram

VONARIS

Important: the installation of VHV models with insertion (push-in) brackets is only feasible when using the **VONOFIX** rapid-installation console!

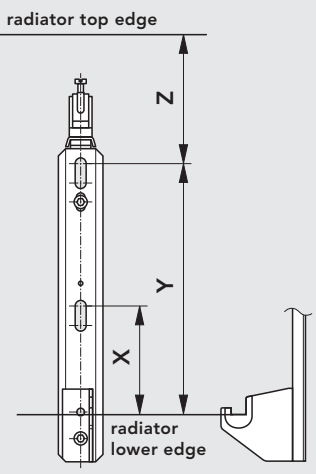
*If you are using a right-angled valve block to connect your VHV models, please leave clearance of **110 mm**, instead of **70 mm**, from the radiator's outside edge for the installation of **VONOFIX**.

VONOFIX rapid-installation console for the VHV models

The **VONARIS** solitary finished radiator can be installed easily, quickly and securely. This is made possible by the **VONOFIX** rapid-installation console for the horizontal designs of the VHV 20, VHV 22 (OH 214 – 790 mm) and VHV 34 (OH 214 and 286 mm) models.

Wall rails for OH 214 – 790 mm

Drilling measurements for the VONOFIX 1 - 5

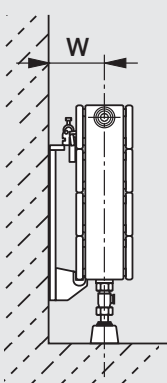
	Overall radiator height [mm]	Value X [mm]	Value Y [mm]	Value Z [mm]
	214	–	125	89
286	100	197	89	
358	100	197	161	
430	100	341	161	
502	100	341	161	
574	100	485	89	
646	100	485	89	
790	100	629	161	

Schematic diagram

The **VONOFIX** rapid-installation console consists of:

- 2 wall consoles (zinc-plated), with sound-proofing filters, screws and dowels
- 2 stabilising brackets
- 2 insertion (push-in) brackets
- (For an overall length of 2200 mm and greater, 1 additional piece of foot console)

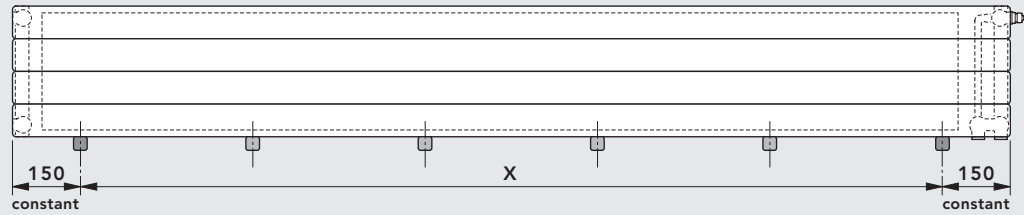
Connection – wall clearance

	Horizontal design model	Overall height [mm]	Measurement W [mm]
	VHV 20	358 – 790	91
VHV 22	214 – 790	91	
VHV 34	214 – 286	91*	

***Note:** if the **VHV 34** is turned round and used as a left-hand design model, the measurement **W** is **172 mm**.

Schematic diagram

Wall consoles WK 10 – 12: positioning for VHV models (up to an overall height of 286 mm)



Note: when using more than 2 wall consoles the additional wall consoles must be placed at regular intervals along the line X.

WK 10 wall console

VHV 11	VHV 20	VHV 22	

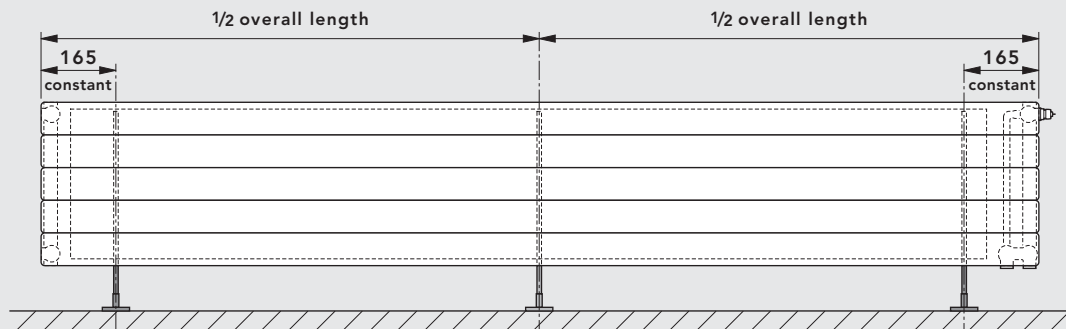
WK 11 wall console

WK 12 wall console

VHV 23	VHV 34	VHV 35	VHV 46

Schematic diagram

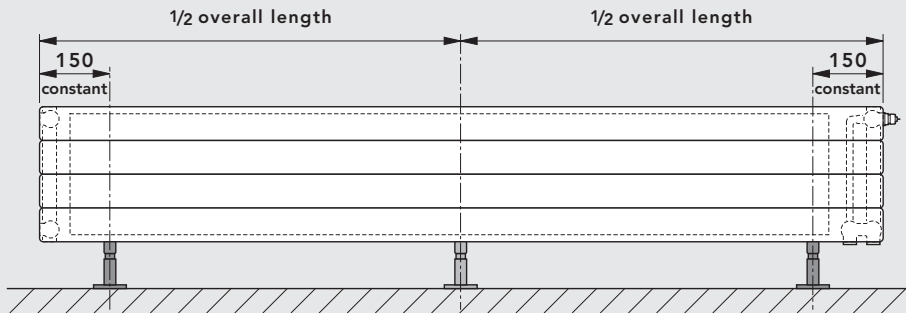
Stand consoles SK 22 and SK 23: positioning for VHV models (for an overall height of 358 mm and greater)



Note: for an overall length of 2200 mm and greater, a 3rd stand console must be used!

Schematic diagram

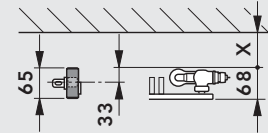
Stand consoles SK 10 – 19: positioning for the VHV/VHV-S models (up to an overall height of 286 mm)



Note: for an overall length of **2200 mm** and greater, a **3rd** stand console must be used!

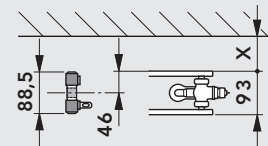
SK 10 / SK 11

VHV 11



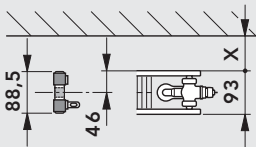
SK 12 / SK 13

VHV 20

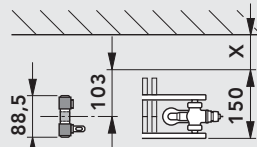


SK 12 / SK 13

VHV 22

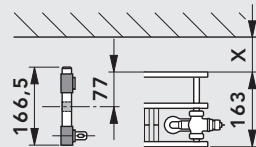


VHV 23

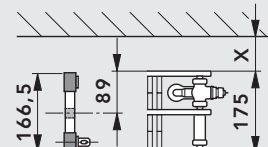


SK 14 / SK 15

VHV-S 22

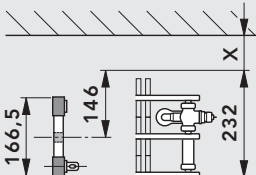


VHV 34

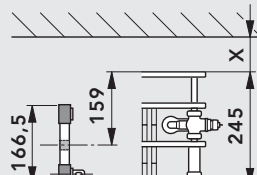


SK 14 / SK 15

VHV 35

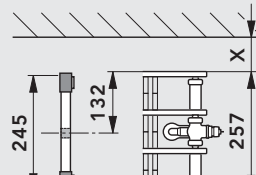


VHV-S 34



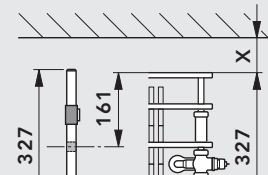
SK 16 / SK 17

VHV 46



SK 18 / SK 19

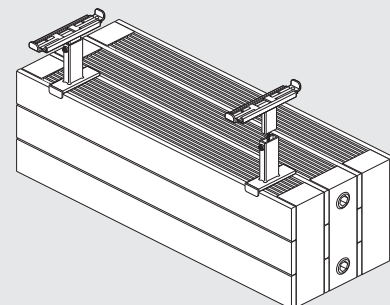
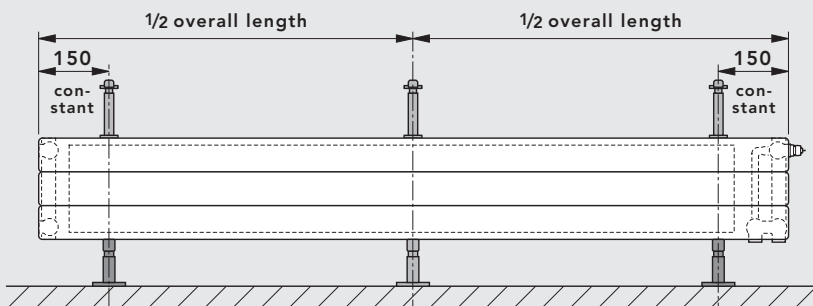
VHV-S 47



Schematic diagram














Window sill support FBT 20: positioning for the VHV/VHV-S models (up to an overall height of 286 mm)

Window sill support for subsequent installation with the **VHV/VHV-S 22-47** models of the **VONARIS** solitary finished radiator (up to an overall height of 286 mm)



Note: for an overall length of **2200 mm** and greater, a **3rd** stand console must be used!

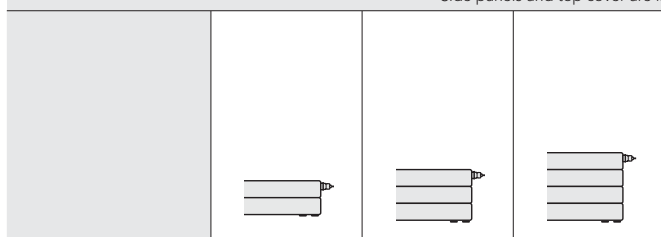
Schematic diagram

Heating output in compliance with DIN EN 442, and ÖNORM EN 442, at 75/65/20° C									
Side panels and top cover are included in the heat output specifications									
									
 Overall height [mm]	142	214	286	358	430	502	574	646	790
Increments	all overall lengths from 500 to 1400 mm in increments of 100 mm, all overall lengths from 1600 to 4000 mm in increments of 200 mm								
Model		VHV 11*	VHV 11*	VHV 11*	VHV 11*	VHV 11*	VHV 11*	VHV 11*	VHV 11*
 Overall depth [mm]		68	68	68	68	68	68	68	68
Watts / m 75/65/20		464	577	667	760	845	921	989	1105
Watts / m 70/55/20		374	464	540	615	683	743	797	889
Watts / m 55/45/20		236	291	344	391	433	470	503	558
Water content l / m		1,67	2,22	2,78	3,33	3,87	4,44	4,99	6,12
Weight kg / m		11,14	14,51	16,71	19,85	22,99	26,15	29,29	33,55
Radiator exponent n		1,32	1,34	1,30	1,30	1,31	1,32	1,32	1,34
Model	VHV 20	VHV 20	VHV 20	VHV 20	VHV 20	VHV 20	VHV 20	VHV 20	VHV 20
 Overall depth [mm]	93	93	93	93	93	93	93	93	93
Watts / m 75/65/20	304	440	561	654	757	859	960	1063	1271
Watts / m 70/55/20	249	359	458	533	617	699	781	863	1032
Watts / m 55/45/20	161	232	296	344	398	449	502	553	661
Water content l / m	2,18	3,34	4,44	5,55	6,66	7,77	8,88	9,99	12,22
Weight kg / m	9,26	13,27	17,28	21,29	25,30	29,31	33,31	37,32	45,33
Radiator exponent n	1,24	1,25	1,25	1,26	1,26	1,27	1,27	1,28	1,28
Model	VHV 22	VHV 22	VHV 22	VHV 22	VHV 22	VHV 22	VHV 22	VHV 22	VHV 22
 Overall depth [mm]	93	93	93	93	93	93	93	93	93
Watts / m 75/65/20	641	838	1032	1197	1343	1474	1592	1699	1886
Watts / m 70/55/20	519	674	825	963	1079	1182	1274	1357	1500
Watts / m 55/45/20	330	423	510	605	675	736	790	838	919
Water content l / m	2,18	3,34	4,44	5,55	6,66	7,77	8,88	9,99	12,22
Weight kg / m	13,97	20,59	27,23	30,89	36,93	42,96	49,01	55,05	63,06
Radiator exponent n	1,30	1,34	1,38	1,34	1,35	1,36	1,37	1,38	1,41

* For aesthetic reasons these models should not be fitted in front of a window.

Heating output in compliance with **DIN EN 442**, and **ÖNORM EN 442**, at **75/65/20° C**

Side panels and top cover are included in the heat output specifications



Overall height [mm]	142	214	286
Increments	all overall lengths from 500 to 1400 mm in increments of 100 mm, all overall lengths from 1600 to 4000 mm in increments of 200 mm		

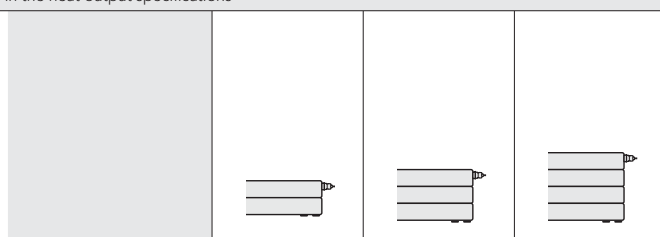
Model	VHV-S 22	VHV-S 22	VHV-S 22
Overall depth [mm]	163	163	163
Watts / m 75/65/20	641	838	1032
Watts / m 70/55/20	519	674	825
Watts / m 55/45/20	330	423	510
Water content l / m	2,18	3,34	4,44
Weight kg / m	19,43	28,34	37,24
Radiator exponent n	1,30	1,34	1,38

Model	VHV 23*	VHV 23*	VHV 23*
Overall depth [mm]	150	150	150
Watts / m 75/65/20	797	1035	1261
Watts / m 70/55/20	645	832	1008
Watts / m 55/45/20	410	522	623
Water content l / m	2,18	3,34	4,44
Weight kg / m	17,02	24,84	32,66
Radiator exponent n	1,30	1,34	1,38

Model	VHV 34	VHV 34	VHV 34
Overall depth [mm]	175	175	175
Watts / m 75/65/20	1050	1394	1723
Watts / m 70/55/20	856	1123	1377
Watts / m 55/45/20	552	707	851
Water content l / m	3,33	4,99	6,66
Weight kg / m	23,93	35,18	46,42
Radiator exponent n	1,26	1,33	1,38

Model	VHV-S 34	VHV-S 34	VHV-S 34
Overall depth [mm]	245	245	245
Watts / m 75/65/20	1050	1394	1723
Watts / m 70/55/20	856	1123	1377
Watts / m 55/45/20	552	707	851
Water content l / m	3,33	4,99	6,66
Weight kg / m	29,39	42,92	56,44
Radiator exponent n	1,26	1,33	1,38

* For aesthetic reasons these models should not be fitted in front of a window.



Overall height [mm]	142	214	286
Increments	all overall lengths from 500 to 1400 mm in increments of 100 mm, all overall lengths from 1600 to 4000 mm in increments of 200 mm		

Model	VHV 35*	VHV 35*	VHV 35*
Overall depth [mm]	232	232	232
Watts / m 75/65/20	1197	1651	1971
Watts / m 70/55/20	971	1326	1570
Watts / m 55/45/20	619	828	964
Water content l / m	3,33	4,99	6,66
Weight kg / m	26,98	39,42	51,86
Radiator exponent n	1,29	1,35	1,40

Model	VHV 46	VHV 46	VHV 46
Overall depth [mm]	257	257	257
Watts / m 75/65/20	1454	2072	2447
Watts / m 70/55/20	1179	1664	1949
Watts / m 55/45/20	752	1040	1197
Water content l / m	4,53	6,79	9,06
Weight kg / m	33,89	49,76	65,62
Radiator exponent n	1,29	1,35	1,40

Model	VHV-S 47	VHV-S 47	VHV-S 47
Overall depth [mm]	327	327	327
Watts / m 75/65/20	1522	2302	2667
Watts / m 70/55/20	1240	1846	2128
Watts / m 55/45/20	800	1149	1311
Water content l / m	4,53	6,79	9,06
Weight kg / m	41,27	60,50	79,74
Radiator exponent n	1,26	1,36	1,39

* For aesthetic reasons these models should not be fitted in front of a window.