



# VK15

NATURAL CONVECTION  
TRENCH HEATERS

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## OPERATION OF A TRENCH HEATER WITH NATURAL CONVECTION



Verano trench heaters have been designed for spacious interiors with lots of glazing. They are perfect for residential buildings, commercial premises, offices as well as historic buildings. In a word, wherever we want to ensure optimal temperature, preserve the character and aesthetics of the interior and its functionality. Trench heating is a modern form of heating system. The heater is mounted in the floor trench and covered with an elegant grille made of wood, aluminum or stainless steel. The most visible part of the heater - the grille, blends in with the room and does not disturb its character as it remains virtually imperceptible. Convector trench heaters are recommended to be placed along external glazed partitions (i.e. patio doors, wide windows, etc.). Such a location will allow for the creation of a specific air curtain, separating warm and cold air and preventing cold "pouring in" near the floor, which results in minimizing heat loss and increasing the efficiency of the entire installation. Verano trench heaters are available in the traditional, simple form, as well as in the angular and arched form, thanks to which they can perfectly fit into and emphasize the character of even the most unique rooms.

Convection heating systems use the phenomenon of heat absorption by air particles as it flows through a heat exchanger. Cold air penetrating through the external partitions, especially windows, flows into the lower part of the convector. The difference in the density of the cool air and the air heated by the convector creates a gentle draft causing air to flow through the exchanger. Natural air circulation is created in the room, thanks to which it is possible to evenly heat the room. Proper air circulation in case of radiators with natural convection takes place when the air flows into the convector from the bottom, heats up and then rises upwards, therefore, the minimum distances between partitions and other elements surrounding the radiator should be kept. This principle is the basis for the operation of convector heaters, which are characterized by a low own weight of the heater, small water capacity and low thermal inertia. As a result, the radiators allow for a sufficiently quick response to the change in heat demand in the room compared to traditional radiators. These heaters are considered the easiest to regulate, which consists in controlling the flow of the heating medium through the convector by means of a thermostatic valve. Details on the implementation of the installation are included in the assembly and maintenance section.

## OUR ADVANTAGES



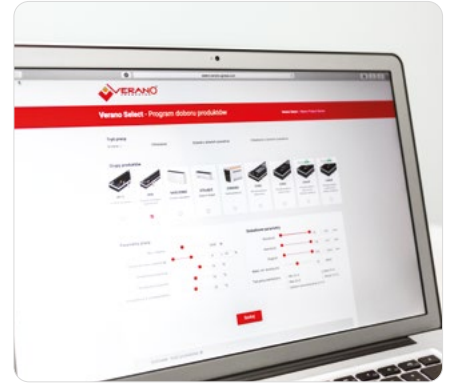
### DURABILITY

The high quality of the materials the heat exchanger is made of (copper-aluminum) guarantees resistance to corrosion and low sensitivity to water quality.



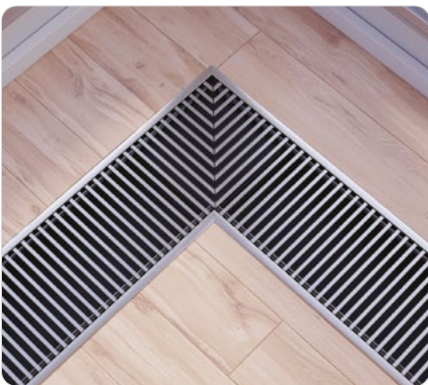
### ADJUSTMENT OF THE TRENCH

Adjustable feet allow for easy, one-step adjustment of the height of the trench in the mounting hole, as well as its trouble-free leveling. Available as an accessory.



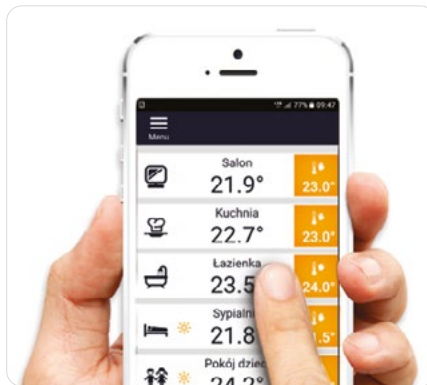
### VERANO SELECT

The selection program enables the selection of an appropriate type of device for any operating parameters, depending on the required heat output.



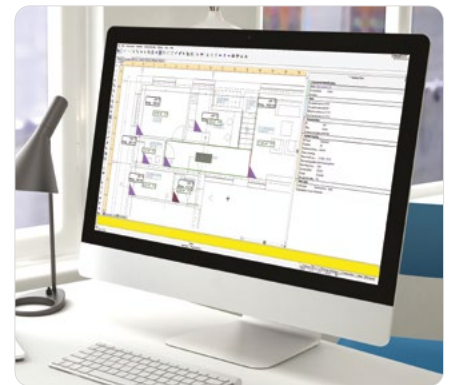
### AESTHETIC CORNER DESIGN

Verano makes corner heaters at any angles.



### WIRELESS CONTROL

It is extremely easy to precisely control the heaters using a phone or tablet with the free application installed.



### TOOLS FOR DESIGNERS

Our products are available in the renowned INSTALSOFT and SANKOM design programs.



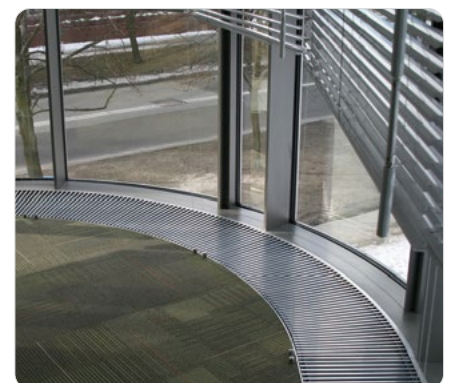
### COMPLIANCE WITH EN 16430 STANDARD

VK15 Verano trench heaters have been tested in accordance with the applicable EN 16430 standard, which confirms their high quality.



### CAD AND BIM LIBRARIES

The VERANO product families used in BIM allow modification of the heater DIMENSIONS and the selection of the type of grille and frame. They also provide all information about the parameters of the products, and allow the heat output of the device to be measured depending on the operating parameters of the installation.



### SPECIAL EXECUTIONS

It is possible to make arched trenches, grilles and heat exchangers. Verano also offers other solutions, such as: runs of heaters, dummy sections and undercuts in trenches for structural elements such as pillars / columns.

## VK15

VISUALIZATION OF THE PRODUCT



## EQUIPMENT

### STANDARD EQUIPMENT:

- trench (casing) made of galvanized steel sheet in RAL 9005 black,
- highly efficient heating element: copper - aluminum exchanger with air vent,
- cover of the connection chamber,
- water connection: 3/4" female thread,
- mounting struts,
- fixing anchors.

### ADDITIONAL EQUIPMENT:

- trench (casing) powder coated in any color from the RAL palette,
- decorative frame around the L or F type heater edge, made of natural or anodized aluminum,
- aesthetic grille,
- assembly cover for protection of heater during transport, handling and installation,
- assembly kit for raised floor,
- foil protecting the heater tub,
- foil sleeve for the heat exchanger

## DIMENSIONS

DIMENSIONS	[mm]
Trench height (H)	75, 90, 110, 140, 180, 250, 350, 540
Trench bottom width (B)	200, 250, 290, 380
Top width/Grille width (Bk)	224, 274, 314, 404
Trench length (L)	800-4000

EXAMPLE OF ORDER CODE:  
**VK15-9/25/100-12 (L)**

Trench length L

Heat exchanger type

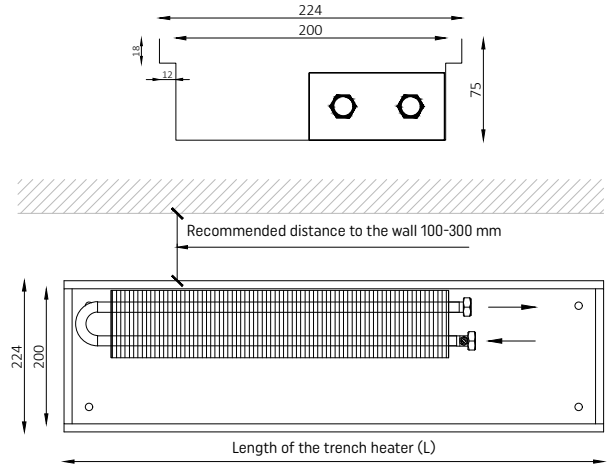
Connection side:  
(L- Left/P - Right)

## HEIGH 75 mm

### VK15-7,5/20/L-12 (L/P)

◀ ORDER CODE

DIMENSIONS	[mm]
Trench heigh (H)	75
Trench bottom width (B)	200
Top width/Grille width (Bk)	224
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	114	91	57	33
900 *	136	109	68	39
1000	159	127	79	46
1100 *	182	146	91	52
1200 *	204	164	102	59
1300	227	182	113	65
1400 *	250	200	125	72
1500 *	272	218	136	78
1600	295	237	147	85
1700 *	318	255	159	92
1800 *	341	273	170	98
1900	363	291	181	105
2000 *	386	309	193	111
2100 *	409	328	204	118
2200	431	346	215	124
2300 *	454	364	227	131
2400 *	477	382	238	137
2500	499	401	249	144
2600 *	522	419	261	150
2700 *	545	437	272	157
2800	568	455	283	163
2900 *	590	473	295	170
3000 *	613	492	306	177
3100 *	636	510	317	183
3200	658	528	328	190
3300 *	681	546	340	196
3400 *	704	564	351	203
3500 *	726	583	362	209
3600	749	601	374	216
3700 *	772	619	385	222
3800 *	795	637	396	229
3900 *	817	655	408	235
4000	840	674	419	242

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

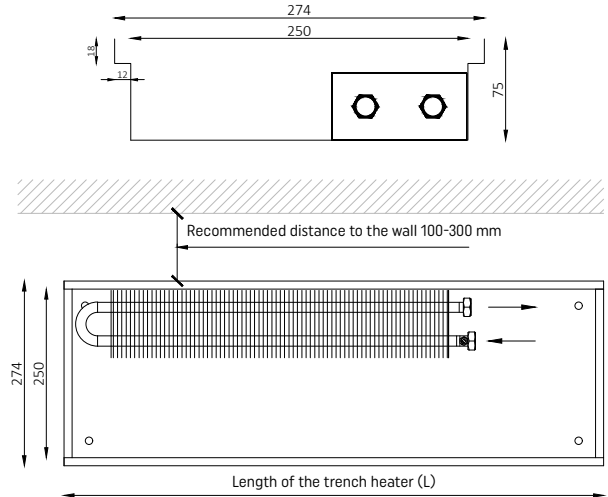
\* Non-standard (NS) heater lengths are available on request.

## HEIGH 75 mm

### VK15-7,5/25/L-12 (L/P)

◀ ORDER CODE

DIMENSIONS	[mm]
Trench heigh (H)	75
Trench bottom width (B)	250
Top width/Grille width (Bk)	274
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	148	118	74	42
900 *	177	142	88	51
1000	207	166	103	59
1100 *	236	189	118	68
1200 *	266	213	132	76
1300	295	237	147	85
1400 *	325	260	162	93
1500 *	354	284	177	102
1600	384	308	191	110
1700 *	413	331	206	119
1800 *	443	355	221	127
1900	472	379	236	136
2000 *	502	402	250	144
2100 *	531	426	265	153
2200	561	450	280	161
2300 *	590	473	294	170
2400 *	620	497	309	178
2500	649	520	324	187
2600 *	679	544	339	195
2700 *	708	568	353	204
2800	738	591	368	212
2900 *	767	615	383	221
3000 *	797	639	397	229
3100 *	826	662	412	238
3200	856	686	427	246
3300 *	885	710	442	255
3400 *	915	733	456	263
3500 *	944	757	471	272
3600	974	781	486	280
3700 *	1003	804	500	289
3800 *	1033	828	515	297
3900 *	1062	852	530	306
4000	1092	875	545	314

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

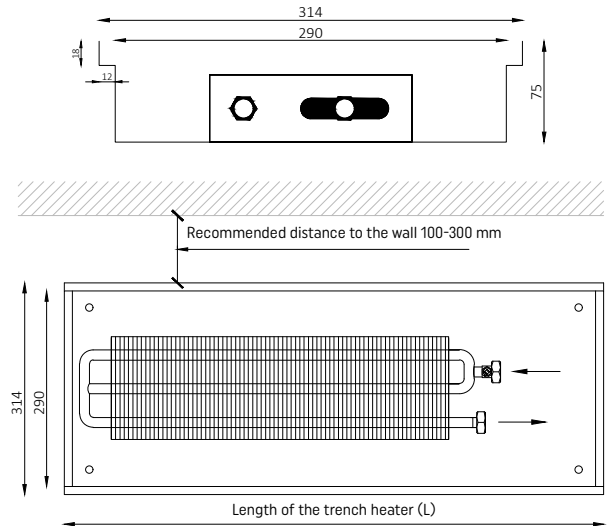
\* Non-standard (NS) heater lengths are available on request.

## HEIGH 75 mm

### VK15-7,5/29/L-13 (L/P)

◀ ORDER CODE

DIMENSIONS	[mm]
Trench heigh (H)	75
Trench bottom width (B)	290
Top width/Grille width (Bk)	314
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	192	154	96	55
900 *	230	184	115	66
1000	268	215	134	77
1100 *	306	246	153	88
1200 *	345	276	172	99
1300	383	307	191	110
1400 *	421	338	210	121
1500 *	460	369	229	132
1600	498	399	248	143
1700 *	536	430	268	154
1800 *	575	461	287	165
1900	613	491	306	176
2000 *	651	522	325	188
2100 *	689	553	344	199
2200	728	584	363	210
2300 *	766	614	382	221
2400 *	804	645	401	232
2500	843	676	420	243
2600 *	881	706	440	254
2700 *	919	737	459	265
2800	958	768	478	276
2900 *	996	799	497	287
3000 *	1034	829	516	298
3100 *	1072	860	535	309
3200	1111	891	554	320
3300 *	1149	921	573	331
3400 *	1187	952	592	342
3500 *	1226	983	612	353
3600	1264	1014	631	364
3700 *	1302	1044	650	375
3800 *	1341	1075	669	386
3900 *	1379	1106	688	397
4000	1417	1137	707	408

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.



## HEIGH 75 mm

### VK15-7,5/38/L-14 (L/P)

◀ ORDER CODE

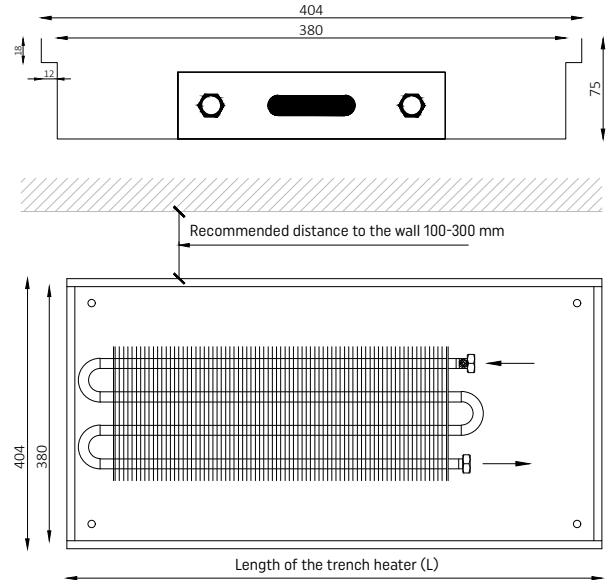
DIMENSIONS	[mm]
Trench heigh (H)	75
Trench bottom width (B)	380
Top width/Grille width (Bk)	404
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	• L or F type



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	277	222	138	80
900 *	332	266	166	96
1000	387	310	193	111
1100 *	442	355	221	127
1200 *	498	399	248	143
1300	553	444	276	159
1400 *	608	488	304	175
1500 *	664	532	331	191
1600	719	577	359	207
1700 *	774	621	386	223
1800 *	830	665	414	239
1900	885	710	442	255
2000 *	940	754	469	271
2100 *	995	798	497	287
2200	1051	843	524	303
2300 *	1106	887	552	319
2400 *	1161	931	579	334
2500	1217	976	607	350
2600 *	1272	1020	635	366
2700 *	1327	1064	662	382
2800	1383	1109	690	398
2900 *	1438	1153	717	414
3000 *	1493	1197	745	430
3100 *	1548	1242	773	446
3200	1604	1286	800	462
3300 *	1659	1331	828	478
3400 *	1714	1375	855	494
3500 *	1770	1419	883	510
3600	1825	1464	911	526
3700 *	1880	1508	938	541
3800 *	1936	1552	966	557
3900 *	1991	1597	993	573
4000	2046	1641	1021	589

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGH 90 mm

### VK15-9/20/L-12 (L/P)

◀ ORDER CODE

DIMENSIONS	[mm]
Trench heigh (H)	90
Trench bottom width (B)	200
Top width/Grille width (Bk)	224
Trench length (L)	800 ÷ 4000

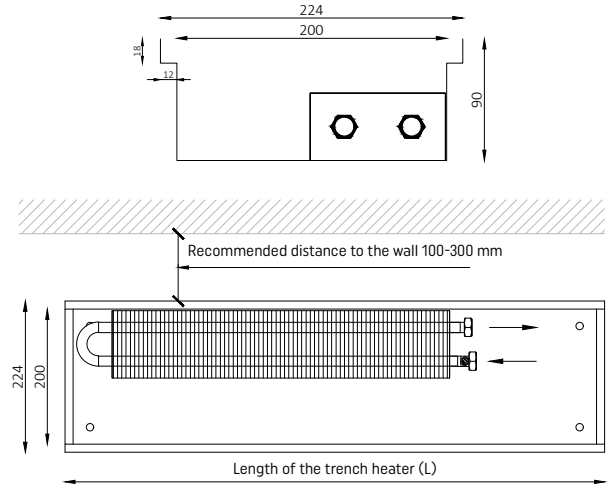
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>

Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>
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TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	134	107	67	39
900 *	161	129	80	46
1000	188	150	94	54
1100 *	214	172	107	62
1200 *	241	193	120	69
1300	268	215	134	77
1400 *	295	236	147	85
1500 *	322	258	160	93
1600	348	279	174	100
1700 *	375	301	187	108
1800 *	402	322	201	116
1900	429	344	214	123
2000 *	456	365	227	131
2100 *	482	387	241	139
2200	509	408	254	147
2300 *	536	430	267	154
2400 *	563	451	281	162
2500	590	473	294	170
2600 *	616	494	308	178
2700 *	643	516	321	185
2800	670	537	334	193
2900 *	697	559	348	201
3000 *	724	580	361	208
3100 *	750	602	374	216
3200	777	623	388	224
3300 *	804	645	401	232
3400 *	831	666	415	239
3500 *	858	688	428	247
3600	884	709	441	255
3700 *	911	731	455	262
3800 *	938	752	468	270
3900 *	965	774	481	278
4000	992	795	495	286

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

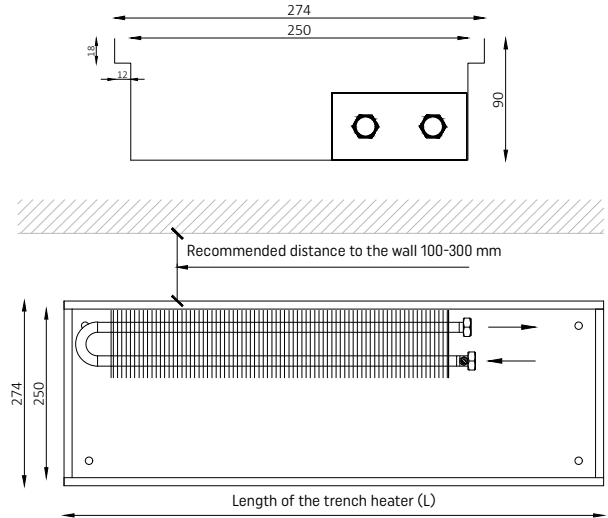
\* Non-standard (NS) heater lengths are available on request.

## HEIGH 90 mm

### VK15-9/25/L-12 (L/P)

◀ ORDER CODE

DIMENSIONS	[mm]
Trench heigh (H)	90
Trench bottom width (B)	250
Top width/Grille width (Bk)	274
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¼" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	173	139	86	50
900 *	208	166	104	60
1000	242	194	121	70
1100 *	277	222	138	80
1200 *	311	250	155	90
1300	346	277	173	100
1400 *	381	305	190	110
1500 *	415	333	207	120
1600	450	361	224	130
1700 *	484	388	242	140
1800 *	519	416	259	149
1900	554	444	276	159
2000 *	588	472	294	169
2100 *	623	499	311	179
2200	657	527	328	189
2300 *	692	555	345	199
2400 *	727	583	363	209
2500	761	610	380	219
2600 *	796	638	397	229
2700 *	830	666	414	239
2800	865	694	432	249
2900 *	900	721	449	259
3000 *	934	749	466	269
3100 *	969	777	483	279
3200	1003	805	501	289
3300 *	1038	832	518	299
3400 *	1073	860	535	309
3500 *	1107	888	552	319
3600	1142	916	570	329
3700 *	1176	943	587	339
3800 *	1211	971	604	349
3900 *	1246	999	622	359
4000	1280	1027	639	369

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

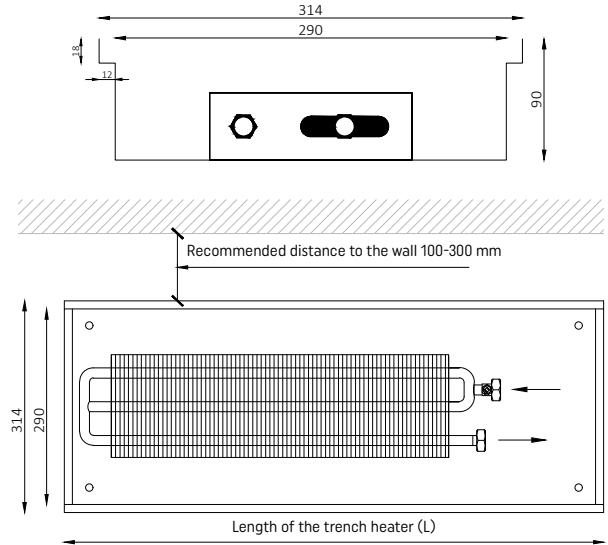
\* Non-standard (NS) heater lengths are available on request.

## HEIGH 90 mm

VK15-9/29/L-13 (L/P)

◀ ORDER CODE

DIMENSIONS	[mm]
Trench heigh (H)	90
Trench bottom width (B)	290
Top width/Grille width (Bk)	314
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	226	181	113	65
900 *	271	217	135	78
1000	316	253	158	91
1100 *	361	289	180	104
1200 *	406	326	203	117
1300	451	362	225	130
1400 *	496	398	248	143
1500 *	541	434	270	156
1600	586	470	293	169
1700 *	631	506	315	182
1800 *	677	543	338	195
1900	722	579	360	208
2000 *	767	615	383	221
2100 *	812	651	405	234
2200	857	687	428	247
2300 *	902	723	450	260
2400 *	947	760	473	273
2500	992	796	495	286
2600 *	1037	832	518	299
2700 *	1082	868	540	312
2800	1128	904	563	325
2900 *	1173	940	585	338
3000 *	1218	977	608	351
3100 *	1263	1013	630	364
3200	1308	1049	653	377
3300 *	1353	1085	675	390
3400 *	1398	1121	698	403
3500 *	1443	1157	720	416
3600	1488	1194	743	429
3700 *	1533	1230	765	442
3800 *	1579	1266	788	455
3900 *	1624	1302	810	468
4000	1669	1338	833	481

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGH 90 mm

### VK15-9/38/L-14 (L/P)

◀ ORDER CODE

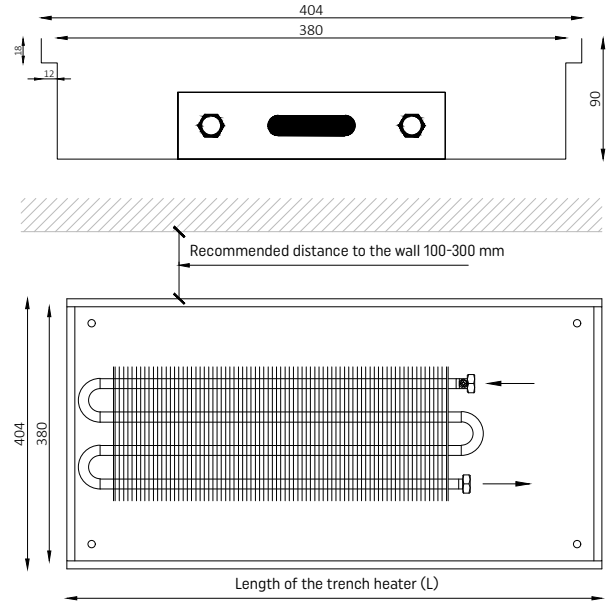
DIMENSIONS	[mm]
Trench heigh (H)	90
Trench bottom width (B)	380
Top width/Grille width (Bk)	404
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	325	261	162	94
900 *	390	313	195	112
1000	455	365	227	131
1100 *	520	417	259	150
1200 *	585	469	292	168
1300	650	521	324	187
1400 *	715	573	357	206
1500 *	780	626	389	225
1600	845	678	422	243
1700 *	910	730	454	262
1800 *	975	782	487	281
1900	1040	834	519	300
2000 *	1105	886	551	318
2100 *	1170	938	584	337
2200	1235	990	616	356
2300 *	1300	1043	649	374
2400 *	1365	1095	681	393
2500	1430	1147	714	412
2600 *	1495	1199	746	431
2700 *	1560	1251	778	449
2800	1625	1303	811	468
2900 *	1690	1355	843	487
3000 *	1755	1408	876	505
3100 *	1820	1460	908	524
3200	1885	1512	941	543
3300 *	1950	1564	973	562
3400 *	2015	1616	1005	580
3500 *	2080	1668	1038	599
3600	2145	1720	1070	618
3700 *	2210	1772	1103	636
3800 *	2275	1825	1135	655
3900 *	2340	1877	1168	674
4000	2405	1929	1200	693

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGH 110 mm

VK15-11/20/L-12 (L/P)

◀ ORDER CODE

DIMENSIONS	[mm]
Trench heigh (H)	110
Trench bottom width (B)	200
Top width/Grille width (Bk)	224
Trench length (L)	800 ÷ 4000

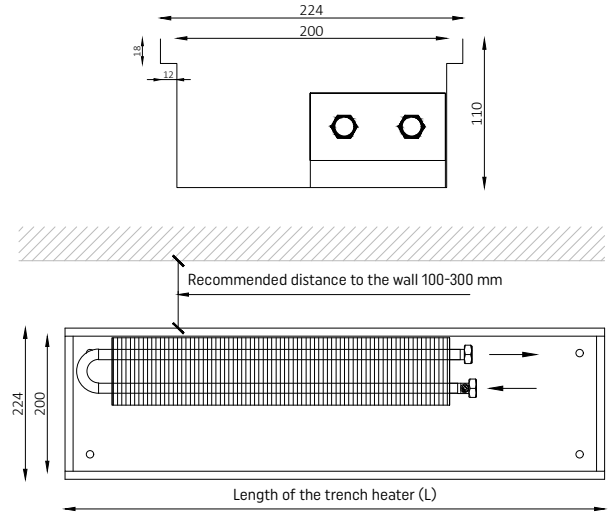
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>

Frames	• L or F type
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TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	155	124	77	44
900 *	185	149	93	53
1000	216	173	108	62
1100 *	247	198	123	71
1200 *	278	223	139	80
1300	309	248	154	89
1400 *	340	273	170	98
1500 *	371	297	185	107
1600	402	322	200	116
1700 *	433	347	216	125
1800 *	464	372	231	133
1900	494	397	247	142
2000 *	525	421	262	151
2100 *	556	446	278	160
2200	587	471	293	169
2300 *	618	496	308	178
2400 *	649	520	324	187
2500	680	545	339	196
2600 *	711	570	355	205
2700 *	742	595	370	214
2800	773	620	385	222
2900 *	803	644	401	231
3000 *	834	669	416	240
3100 *	865	694	432	249
3200	896	719	447	258
3300 *	927	743	463	267
3400 *	958	768	478	276
3500 *	989	793	493	285
3600	1020	818	509	294
3700 *	1051	843	524	303
3800 *	1082	867	540	311
3900 *	1112	892	555	320
4000	1143	917	571	329

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGH 110 mm

VK15-11/25/L-12 (L/P)

◀ ORDER CODE

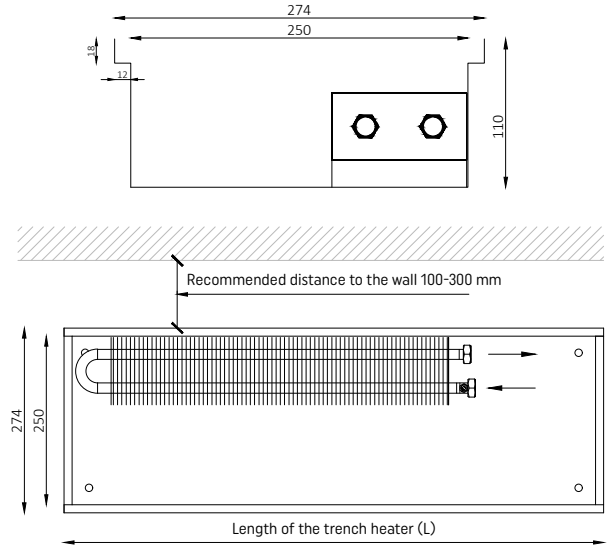
DIMENSIONS	[mm]
Trench heigh (H)	110
Trench bottom width (B)	250
Top width/Grille width (Bk)	274
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	205	164	102	59
900 *	245	197	122	71
1000	286	230	143	82
1100 *	327	262	163	94
1200 *	368	295	184	106
1300	409	328	204	118
1400 *	450	361	225	130
1500 *	491	394	245	141
1600	532	426	265	153
1700 *	573	459	286	165
1800 *	614	492	306	177
1900	654	525	327	188
2000 *	695	558	347	200
2100 *	736	590	367	212
2200	777	623	388	224
2300 *	818	656	408	236
2400 *	859	689	429	247
2500	900	722	449	259
2600 *	941	754	469	271
2700 *	982	787	490	283
2800	1023	820	510	294
2900 *	1063	853	531	306
3000 *	1104	886	551	318
3100 *	1145	918	571	330
3200	1186	951	592	342
3300 *	1227	984	612	353
3400 *	1268	1017	633	365
3500 *	1309	1050	653	377
3600	1350	1082	674	389
3700 *	1391	1115	694	400
3800 *	1432	1148	714	412
3900 *	1472	1181	735	424
4000	1513	1214	755	436

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGH 110 mm

VK15-11/29/L-13 (L/P)

◀ ORDER CODE

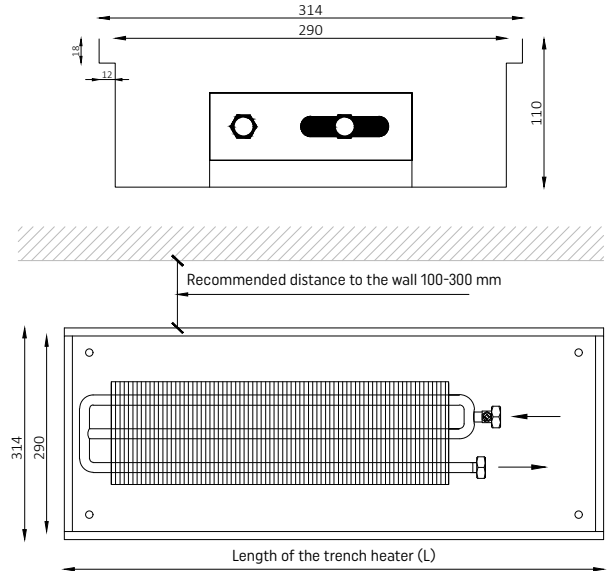
DIMENSIONS	[mm]
Trench heigh (H)	110
Trench bottom width (B)	290
Top width/Grille width (Bk)	314
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	267	214	133	77
900 *	320	256	160	92
1000	373	299	186	107
1100 *	426	342	213	123
1200 *	480	385	239	138
1300	533	427	266	154
1400 *	586	470	293	169
1500 *	640	513	319	184
1600	693	556	346	200
1700 *	746	598	372	215
1800 *	800	641	399	230
1900	853	684	426	246
2000 *	906	727	452	261
2100 *	959	769	479	276
2200	1013	812	505	292
2300 *	1066	855	532	307
2400 *	1119	898	559	322
2500	1173	940	585	338
2600 *	1226	983	612	353
2700 *	1279	1026	638	368
2800	1333	1069	665	384
2900 *	1386	1111	692	399
3000 *	1439	1154	718	414
3100 *	1492	1197	745	430
3200	1546	1240	771	445
3300 *	1599	1282	798	461
3400 *	1652	1325	824	476
3500 *	1706	1368	851	491
3600	1759	1411	878	507
3700 *	1812	1453	904	522
3800 *	1866	1496	931	537
3900 *	1919	1539	957	553
4000	1972	1582	984	568

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.



## HEIGH 110 mm

VK15-11/38/L-14 (L/P)

◀ ORDER CODE

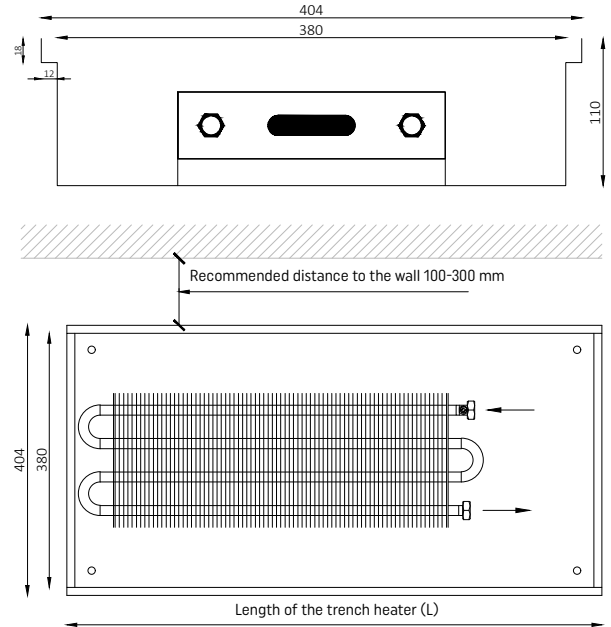
DIMENSIONS	[mm]
Trench heigh (H)	110
Trench bottom width (B)	380
Top width/Grille width (Bk)	404
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	374	300	187	108
900 *	449	360	224	129
1000	524	420	261	151
1100 *	598	480	299	172
1200 *	673	540	336	194
1300	748	600	373	215
1400 *	823	660	411	237
1500 *	898	720	448	259
1600	972	780	485	280
1700 *	1047	840	523	302
1800 *	1122	900	560	323
1900	1197	960	597	345
2000 *	1272	1020	635	366
2100 *	1346	1080	672	388
2200	1421	1140	709	409
2300 *	1496	1200	747	431
2400 *	1571	1260	784	452
2500	1646	1320	821	474
2600 *	1720	1380	858	495
2700 *	1795	1440	896	517
2800	1870	1500	933	539
2900 *	1945	1560	970	560
3000 *	2020	1620	1008	582
3100 *	2094	1680	1045	603
3200	2169	1740	1082	625
3300 *	2244	1800	1120	646
3400 *	2319	1860	1157	668
3500 *	2394	1920	1194	689
3600	2468	1980	1232	711
3700 *	2543	2040	1269	732
3800 *	2618	2100	1306	754
3900 *	2693	2160	1344	776
4000	2768	2220	1381	797

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGHT 140 mm

VK15-14/20/L-22 (L/P)

◀ ORDER CODE

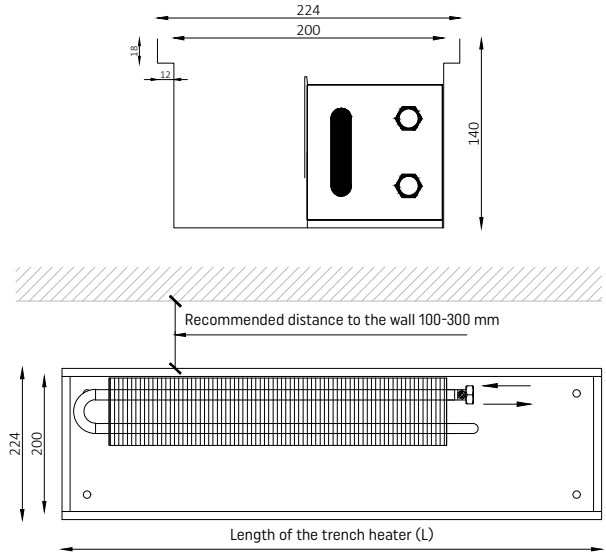
DIMENSIONS	[mm]
Trench height (H)	140
Trench bottom width (B)	200
Top width/Grille width (Bk)	224
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	• L or F type



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	191	153	95	55
900 *	229	184	114	66
1000	267	214	133	77
1100 *	306	245	152	88
1200 *	344	276	172	99
1300	382	306	191	110
1400 *	420	337	210	121
1500 *	458	368	229	132
1600	497	398	248	143
1700 *	535	429	267	154
1800 *	573	460	286	165
1900	611	490	305	176
2000 *	649	521	324	187
2100 *	688	551	343	198
2200	726	582	362	209
2300 *	764	613	381	220
2400 *	802	643	400	231
2500	840	674	419	242
2600 *	879	705	438	253
2700 *	917	735	457	264
2800	955	766	477	275
2900 *	993	797	496	286
3000 *	1031	827	515	297
3100 *	1070	858	534	308
3200	1108	888	553	319
3300 *	1146	919	572	330
3400 *	1184	950	591	341
3500 *	1222	980	610	352
3600	1261	1011	629	363
3700 *	1299	1042	648	374
3800 *	1337	1072	667	385
3900 *	1375	1103	686	396
4000	1413	1134	705	407

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGH 140 mm

### VK15-14/25/L-22 (L/P)

◀ ORDER CODE

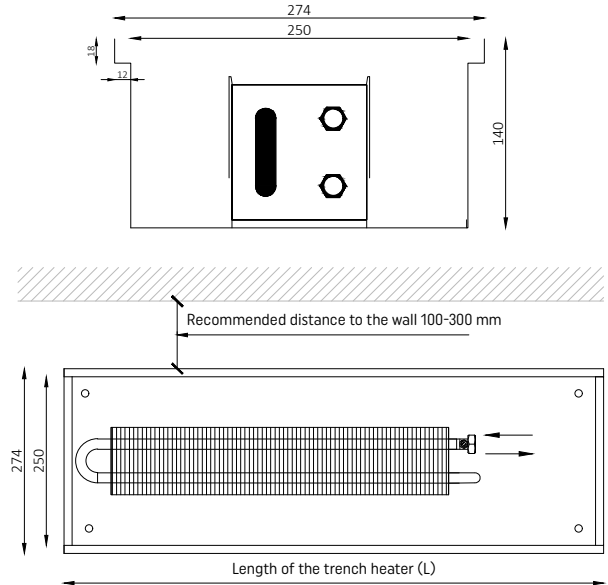
DIMENSIONS	[mm]
Trench heigh (H)	140
Trench bottom width (B)	250
Top width/Grille width (Bk)	274
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	253	203	126	73
900 *	304	243	151	87
1000	354	284	177	102
1100 *	405	325	202	117
1200 *	455	365	227	131
1300	506	406	252	146
1400 *	557	446	278	160
1500 *	607	487	303	175
1600	658	528	328	189
1700 *	708	568	353	204
1800 *	759	609	379	219
1900	810	649	404	233
2000 *	860	690	429	248
2100 *	911	730	454	262
2200	961	771	480	277
2300 *	1012	812	505	291
2400 *	1063	852	530	306
2500	1113	893	555	321
2600 *	1164	933	581	335
2700 *	1214	974	606	350
2800	1265	1015	631	364
2900 *	1316	1055	656	379
3000 *	1366	1096	682	393
3100 *	1417	1136	707	408
3200	1467	1177	732	423
3300 *	1518	1217	757	437
3400 *	1569	1258	783	452
3500 *	1619	1299	808	466
3600	1670	1339	833	481
3700 *	1720	1380	858	495
3800 *	1771	1420	884	510
3900 *	1822	1461	909	525
4000	1872	1502	934	539

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGH 140 mm

VK15-14/29/L-23 (L/P)

◀ ORDER CODE

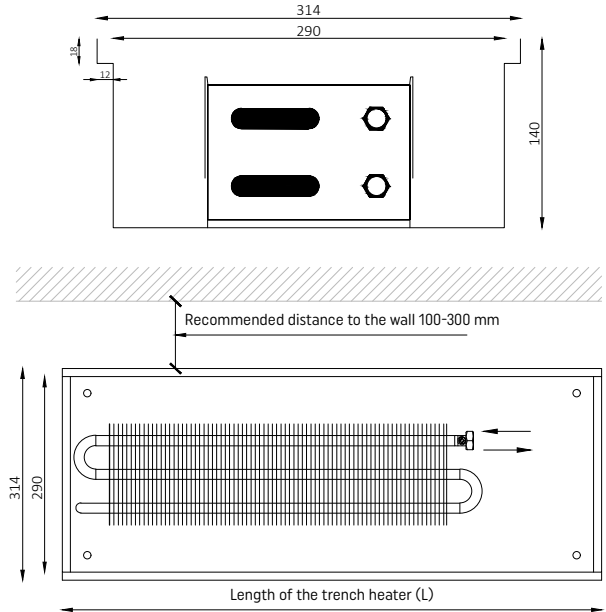
DIMENSIONS	[mm]
Trench heigh (H)	140
Trench bottom width (B)	290
Top width/Grille width (Bk)	314
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	344	276	172	99
900 *	413	331	206	119
1000	482	386	240	139
1100 *	550	441	275	159
1200 *	619	497	309	178
1300	688	552	343	198
1400 *	757	607	378	218
1500 *	826	662	412	238
1600	894	717	446	258
1700 *	963	772	481	277
1800 *	1032	828	515	297
1900	1101	883	549	317
2000 *	1170	938	584	337
2100 *	1238	993	618	357
2200	1307	1048	652	376
2300 *	1376	1104	687	396
2400 *	1445	1159	721	416
2500	1514	1214	755	436
2600 *	1582	1269	790	456
2700 *	1651	1324	824	476
2800	1720	1379	858	495
2900 *	1789	1435	893	515
3000 *	1858	1490	927	535
3100 *	1926	1545	961	555
3200	1995	1600	996	575
3300 *	2064	1655	1030	594
3400 *	2133	1711	1064	614
3500 *	2202	1766	1099	634
3600	2270	1821	1133	654
3700 *	2339	1876	1167	674
3800 *	2408	1931	1202	694
3900 *	2477	1986	1236	713
4000	2546	2042	1270	733

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGHT 140 mm

### VK15-14/38/L-24 (L/P)

◀ ORDER CODE

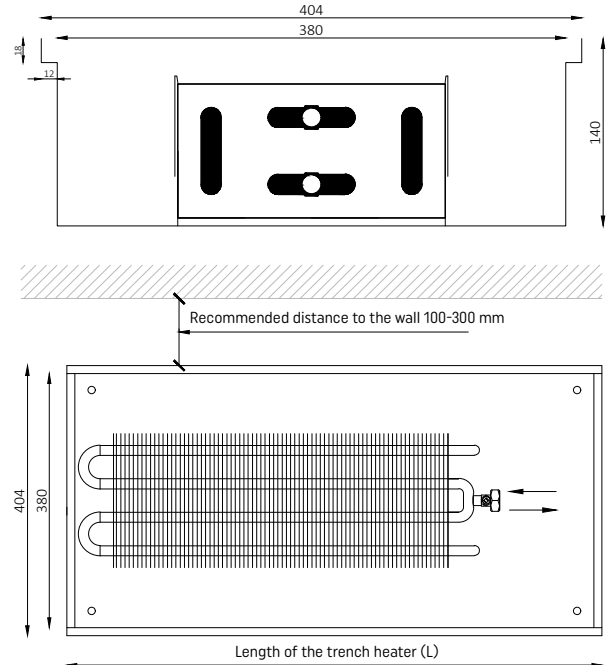
DIMENSIONS	[mm]
Trench height (H)	140
Trench bottom width (B)	380
Top width/Grille width (Bk)	404
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	465	373	232	134
900 *	557	447	278	161
1000	650	522	324	187
1100 *	743	596	371	214
1200 *	836	671	417	241
1300	929	745	464	268
1400 *	1022	820	510	294
1500 *	1115	894	556	321
1600	1208	969	603	348
1700 *	1301	1043	649	375
1800 *	1394	1118	695	401
1900	1486	1192	742	428
2000 *	1579	1267	788	455
2100 *	1672	1341	834	482
2200	1765	1416	881	508
2300 *	1858	1490	927	535
2400 *	1951	1565	973	562
2500	2044	1639	1020	589
2600 *	2137	1714	1066	615
2700 *	2230	1788	1113	642
2800	2323	1863	1159	669
2900 *	2415	1937	1205	696
3000 *	2508	2012	1252	722
3100 *	2601	2086	1298	749
3200	2694	2161	1344	776
3300 *	2787	2235	1391	803
3400 *	2880	2310	1437	829
3500 *	2973	2384	1483	856
3600	3066	2459	1530	883
3700 *	3159	2533	1576	910
3800 *	3252	2608	1622	936
3900 *	3344	2682	1669	963
4000	3437	2757	1715	990

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGH 180 mm

### VK15-18/20/L-22 (L/P)

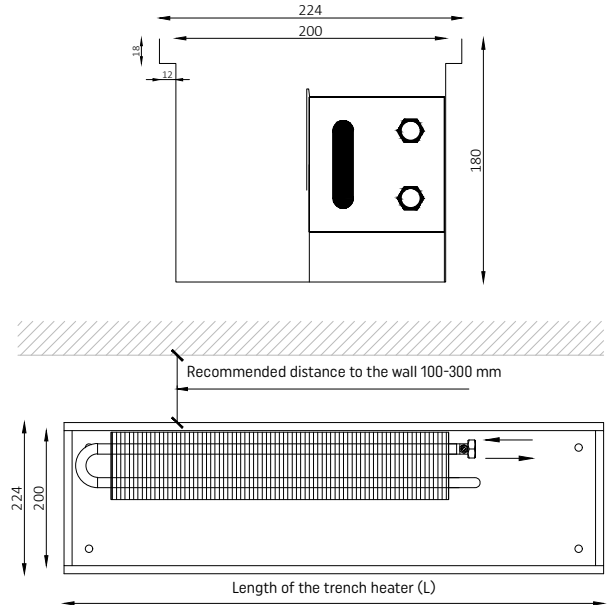
◀ ORDER CODE

DIMENSIONS	[mm]
Trench heigh (H)	180
Trench bottom width (B)	200
Top width/Grille width (Bk)	224
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>

TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	256	205	127	74
900 *	307	246	153	88
1000	358	287	178	103
1100 *	409	328	204	118
1200 *	460	369	229	132
1300	511	410	255	147
1400 *	562	451	280	162
1500 *	613	492	306	177
1600	664	533	331	191
1700 *	715	574	357	206
1800 *	767	615	382	221
1900	818	656	408	235
2000 *	869	697	433	250
2100 *	920	738	459	265
2200	971	779	484	280
2300 *	1022	820	510	294
2400 *	1073	861	535	309
2500	1124	902	561	324
2600 *	1175	943	586	338
2700 *	1226	984	612	353
2800	1278	1025	637	368
2900 *	1329	1066	663	383
3000 *	1380	1107	688	397
3100 *	1431	1148	714	412
3200	1482	1188	739	427
3300 *	1533	1229	765	442
3400 *	1584	1270	790	456
3500 *	1635	1311	816	471
3600	1686	1352	841	486
3700 *	1737	1393	867	500
3800 *	1789	1434	892	515
3900 *	1840	1475	918	530
4000	1891	1516	943	545

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.



## HEIGHT 180 mm

### VK15-18/25/L-22 (L/P)

◀ ORDER CODE

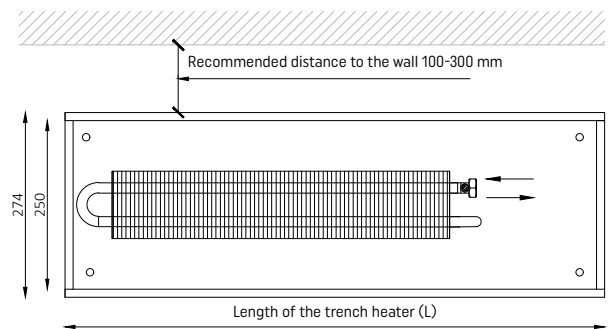
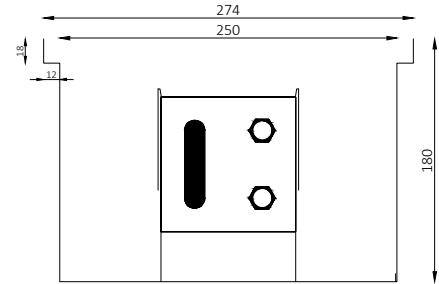
DIMENSIONS	[mm]
Trench height (H)	180
Trench bottom width (B)	250
Top width/Grille width (Bk)	274
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¼" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	309	248	154	89
900 *	371	297	185	107
1000	433	347	216	125
1100 *	494	397	247	142
1200 *	556	446	278	160
1300	618	496	308	178
1400 *	680	545	339	196
1500 *	742	595	370	214
1600	803	644	401	231
1700 *	865	694	432	249
1800 *	927	743	463	267
1900	989	793	493	285
2000 *	1051	843	524	303
2100 *	1112	892	555	320
2200	1174	942	586	338
2300 *	1236	991	617	356
2400 *	1298	1041	648	374
2500	1360	1090	678	392
2600 *	1421	1140	709	409
2700 *	1483	1190	740	427
2800	1545	1239	771	445
2900 *	1607	1289	802	463
3000 *	1669	1338	833	481
3100 *	1730	1388	863	498
3200	1792	1437	894	516
3300 *	1854	1487	925	534
3400 *	1916	1536	956	552
3500 *	1978	1586	987	570
3600	2039	1636	1018	587
3700 *	2101	1685	1048	605
3800 *	2163	1735	1079	623
3900 *	2225	1784	1110	641
4000	2287	1834	1141	659

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGH 180 mm

### VK15-18/29/L-23 (L/P)

◀ ORDER CODE

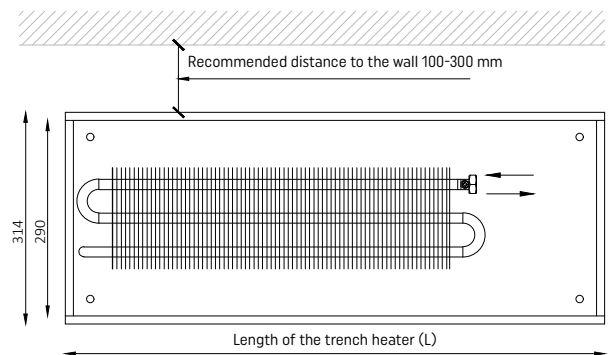
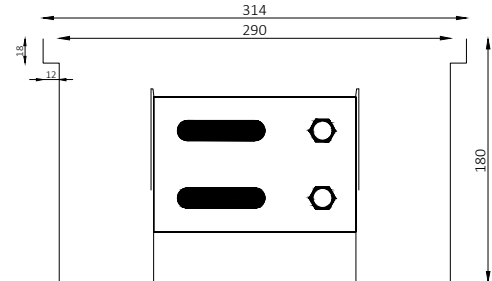
DIMENSIONS	[mm]
Trench heigh (H)	180
Trench bottom width (B)	290
Top width/Grille width (Bk)	314
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	409	328	204	118
900 *	491	394	245	141
1000	573	459	286	165
1100 *	654	525	327	188
1200 *	736	590	367	212
1300	818	656	408	236
1400 *	900	722	449	259
1500 *	982	787	490	283
1600	1063	853	531	306
1700 *	1145	918	571	330
1800 *	1227	984	612	353
1900	1309	1050	653	377
2000 *	1391	1115	694	400
2100 *	1472	1181	735	424
2200	1554	1246	776	448
2300 *	1636	1312	816	471
2400 *	1718	1378	857	495
2500	1800	1443	898	518
2600 *	1881	1509	939	542
2700 *	1963	1574	980	565
2800	2045	1640	1020	589
2900 *	2127	1706	1061	613
3000 *	2209	1771	1102	636
3100 *	2290	1837	1143	660
3200	2372	1903	1184	683
3300 *	2454	1968	1225	707
3400 *	2536	2034	1265	730
3500 *	2618	2099	1306	754
3600	2699	2165	1347	777
3700 *	2781	2231	1388	801
3800 *	2863	2296	1429	825
3900 *	2945	2362	1469	848
4000	3027	2427	1510	872

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.



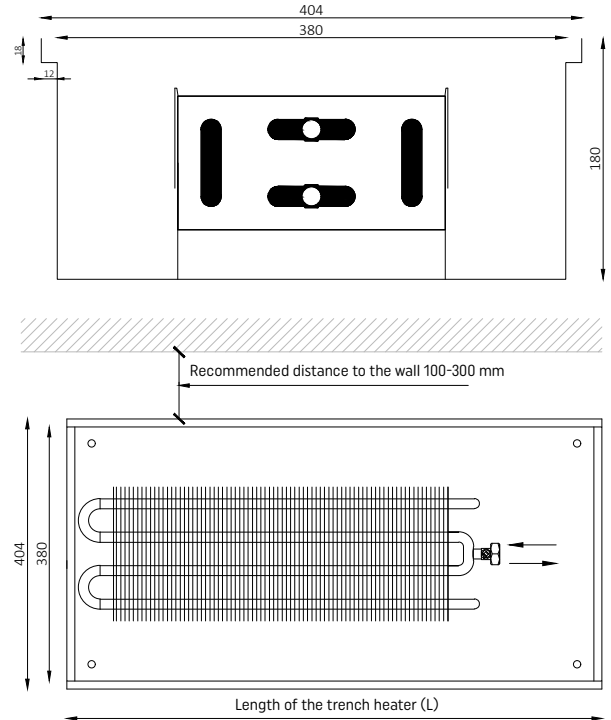
**HEIGH 180 mm**

**VK15-18/38/L-24 (L/P)**

◀ ORDER CODE

DIMENSIONS	[mm]
Trench heigh (H)	180
Trench bottom width (B)	380
Top width/Grille width (Bk)	404
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>

TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	563	451	281	162
900 *	675	541	337	194
1000	788	632	393	227
1100 *	900	722	449	259
1200 *	1013	812	505	292
1300	1125	902	561	324
1400 *	1238	992	618	356
1500 *	1350	1083	674	389
1600	1463	1173	730	421
1700 *	1575	1263	786	454
1800 *	1688	1353	842	486
1900	1800	1444	898	518
2000 *	1913	1534	954	551
2100 *	2025	1624	1010	583
2200	2138	1714	1067	616
2300 *	2250	1805	1123	648
2400 *	2363	1895	1179	680
2500	2475	1985	1235	713
2600 *	2588	2075	1291	745
2700 *	2700	2165	1347	778
2800	2813	2256	1403	810
2900 *	2925	2346	1460	842
3000 *	3038	2436	1516	875
3100 *	3150	2526	1572	907
3200	3263	2617	1628	940
3300 *	3375	2707	1684	972
3400 *	3488	2797	1740	1004
3500 *	3600	2887	1796	1037
3600	3713	2977	1853	1069
3700 *	3825	3068	1909	1102
3800 *	3938	3158	1965	1134
3900 *	4050	3248	2021	1166
4000	4163	3338	2077	1199



Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

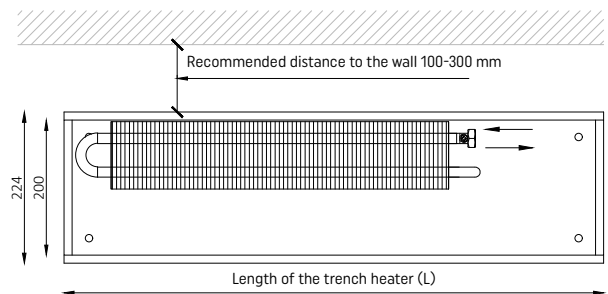
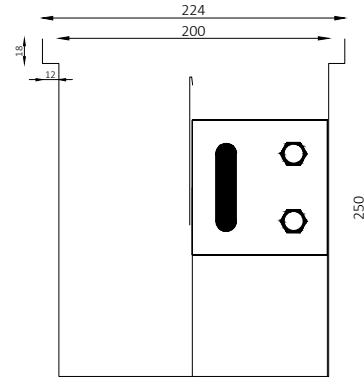
## HEIGHT 250 mm

### VK15-25/20/L-22 (L/P)

◀ ORDER CODE

DIMENSIONS	[mm]
Trench height (H)	250
Trench bottom width (B)	200
Top width/Grille width (Bk)	224
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>

TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	346	277	173	100
900 *	415	333	207	120
1000	484	388	242	140
1100 *	554	444	276	159
1200 *	623	499	311	179
1300	692	555	345	199
1400 *	761	610	380	219
1500 *	830	666	414	239
1600	900	721	449	259
1700 *	969	777	483	279
1800 *	1038	832	518	299
1900	1107	888	552	319
2000 *	1176	943	587	339
2100 *	1246	999	622	359
2200	1315	1054	656	379
2300 *	1384	1110	691	399
2400 *	1453	1165	725	419
2500	1522	1221	760	438
2600 *	1592	1276	794	458
2700 *	1661	1332	829	478
2800	1730	1387	863	498
2900 *	1799	1443	898	518
3000 *	1868	1498	932	538
3100 *	1938	1554	967	558
3200	2007	1609	1001	578
3300 *	2076	1665	1036	598
3400 *	2145	1720	1070	618
3500 *	2214	1776	1105	638
3600	2284	1831	1140	658
3700 *	2353	1887	1174	678
3800 *	2422	1942	1209	698
3900 *	2491	1998	1243	717
4000	2560	2053	1278	737



Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGHT 250 mm

### VK15-25/25/L-22 (L/P)

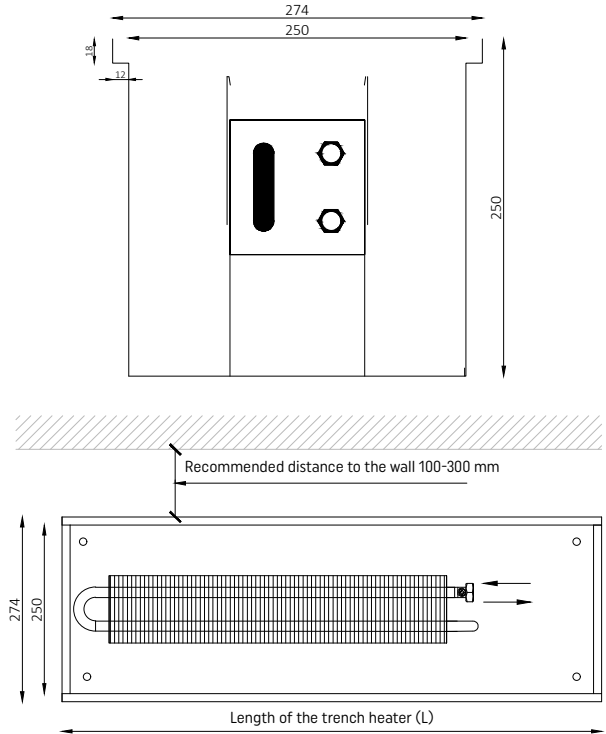
◀ ORDER CODE

DIMENSIONS	[mm]
Trench height (H)	250
Trench bottom width (B)	250
Top width/Grille width (Bk)	274
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>

TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	388	311	193	112
900 *	465	373	232	134
1000	543	435	271	156
1100 *	620	497	309	179
1200 *	698	559	348	201
1300	775	622	387	223
1400 *	853	684	425	246
1500 *	930	746	464	268
1600	1008	808	503	290
1700 *	1085	870	541	312
1800 *	1163	932	580	335
1900	1240	994	619	357
2000 *	1318	1057	657	379
2100 *	1395	1119	696	402
2200	1473	1181	735	424
2300 *	1550	1243	773	446
2400 *	1628	1305	812	469
2500	1705	1367	851	491
2600 *	1783	1430	889	513
2700 *	1860	1492	928	536
2800	1938	1554	967	558
2900 *	2015	1616	1005	580
3000 *	2093	1678	1044	603
3100 *	2170	1740	1083	625
3200	2248	1802	1122	647
3300 *	2325	1865	1160	670
3400 *	2403	1927	1199	692
3500 *	2480	1989	1238	714
3600	2558	2051	1276	737
3700 *	2635	2113	1315	759
3800 *	2713	2175	1354	781
3900 *	2790	2238	1392	804
4000	2868	2300	1431	826

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.



## HEIGHT 250 mm

VK15-25/29/L-23 (L/P)

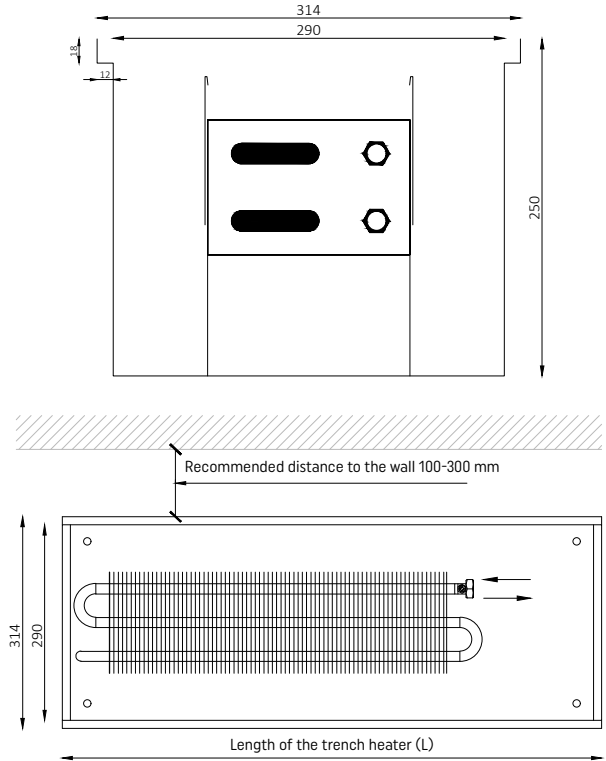
◀ ORDER CODE

DIMENSIONS	[mm]
Trench height (H)	250
Trench bottom width (B)	290
Top width/Grille width (Bk)	314
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>

TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	501	402	250	144
900 *	601	482	300	173
1000	701	563	350	202
1100 *	802	643	400	231
1200 *	902	723	450	260
1300	1002	804	500	289
1400 *	1102	884	550	317
1500 *	1202	964	600	346
1600	1303	1045	650	375
1700 *	1403	1125	700	404
1800 *	1503	1205	750	433
1900	1603	1286	800	462
2000 *	1703	1366	850	491
2100 *	1804	1446	900	519
2200	1904	1527	950	548
2300 *	2004	1607	1000	577
2400 *	2104	1688	1050	606
2500	2204	1768	1100	635
2600 *	2305	1848	1150	664
2700 *	2405	1929	1200	693
2800	2505	2009	1250	721
2900 *	2605	2089	1300	750
3000 *	2705	2170	1350	779
3100 *	2806	2250	1400	808
3200	2906	2330	1450	837
3300 *	3006	2411	1500	866
3400 *	3106	2491	1550	895
3500 *	3206	2572	1600	923
3600	3307	2652	1650	952
3700 *	3407	2732	1700	981
3800 *	3507	2813	1750	1010
3900 *	3607	2893	1800	1039
4000	3707	2973	1850	1068

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.



## HEIGH 250 mm

### VK15-25/38/L-24 (L/P)

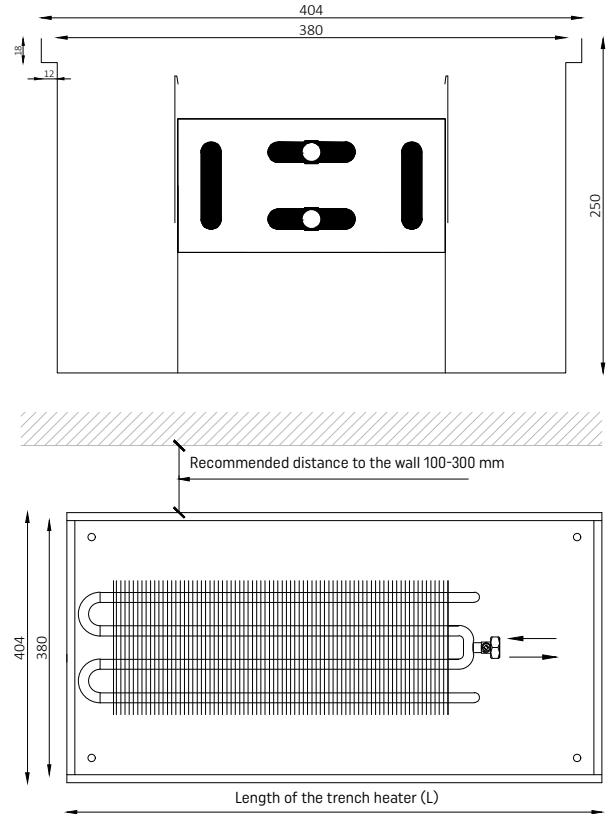
◀ ORDER CODE

DIMENSIONS	[mm]
Trench heigh (H)	250
Trench bottom width (B)	380
Top width/Grille width (Bk)	404
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>

TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	701	562	350	202
900 *	841	674	419	242
1000	981	787	489	282
1100 *	1121	899	559	323
1200 *	1261	1011	629	363
1300	1401	1124	699	403
1400 *	1541	1236	769	444
1500 *	1681	1348	839	484
1600	1821	1461	909	525
1700 *	1961	1573	979	565
1800 *	2102	1685	1049	605
1900	2242	1798	1119	646
2000 *	2382	1910	1188	686
2100 *	2522	2022	1258	726
2200	2662	2135	1328	767
2300 *	2802	2247	1398	807
2400 *	2942	2360	1468	847
2500	3082	2472	1538	888
2600 *	3222	2584	1608	928
2700 *	3362	2697	1678	968
2800	3503	2809	1748	1009
2900 *	3643	2921	1818	1049
3000 *	3783	3034	1888	1089
3100 *	3923	3146	1957	1130
3200	4063	3258	2027	1170
3300 *	4203	3371	2097	1210
3400 *	4343	3483	2167	1251
3500 *	4483	3596	2237	1291
3600	4623	3708	2307	1332
3700 *	4763	3820	2377	1372
3800 *	4904	3933	2447	1412
3900 *	5044	4045	2517	1453
4000	5184	4157	2587	1493

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

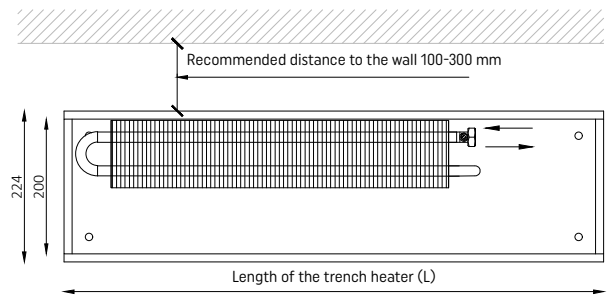
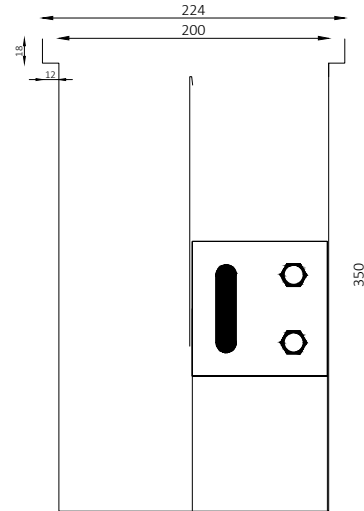


## HEIGHT 350 mm

### VK15-35/20/L-22 (L/P)

◀ ORDER CODE

DIMENSIONS	[mm]
Trench height (H)	350
Trench bottom width (B)	200
Top width/Grille width (Bk)	224
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	$\Phi$ [W]			
800	417	334	208	120
900 *	500	401	249	144
1000	583	468	291	168
1100 *	666	534	333	192
1200 *	750	601	374	216
1300	833	668	416	240
1400 *	916	735	457	264
1500 *	1000	802	499	288
1600	1083	868	540	312
1700 *	1166	935	582	336
1800 *	1250	1002	624	360
1900	1333	1069	665	384
2000 *	1416	1136	707	408
2100 *	1499	1203	748	432
2200	1583	1269	790	456
2300 *	1666	1336	831	480
2400 *	1749	1403	873	504
2500	1833	1470	914	528
2600 *	1916	1537	956	552
2700 *	1999	1603	998	576
2800	2083	1670	1039	600
2900 *	2166	1737	1081	624
3000 *	2249	1804	1122	648
3100 *	2332	1871	1164	672
3200	2416	1937	1205	696
3300 *	2499	2004	1247	720
3400 *	2582	2071	1289	744
3500 *	2666	2138	1330	768
3600	2749	2205	1372	792
3700 *	2832	2271	1413	816
3800 *	2916	2338	1455	840
3900 *	2999	2405	1496	864
4000	3082	2472	1538	888

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGH 350 mm

VK15-35/29/L-23 (L/P)

◀ ORDER CODE

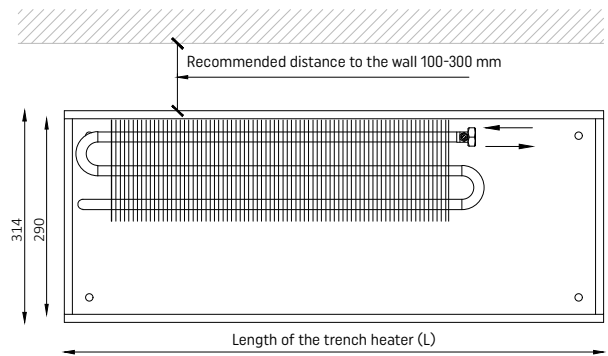
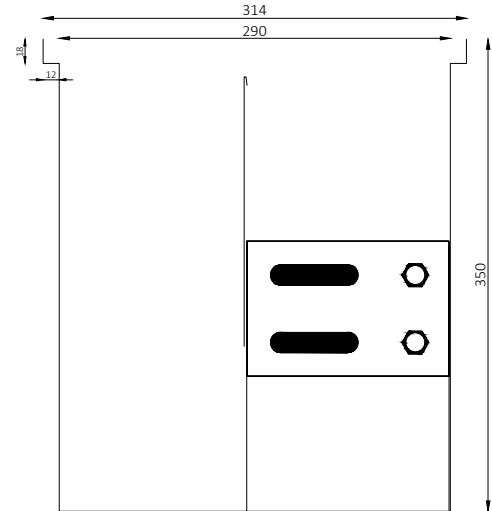
DIMENSIONS	[mm]
Trench heigh (H)	350
Trench bottom width (B)	290
Top width/Grille width (Bk)	314
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	• L or F type



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	694	556	346	200
900 *	832	667	415	240
1000	971	779	484	280
1100 *	1110	890	554	320
1200 *	1248	1001	623	360
1300	1387	1112	692	399
1400 *	1526	1224	761	439
1500 *	1664	1335	831	479
1600	1803	1446	900	519
1700 *	1942	1557	969	559
1800 *	2081	1669	1038	599
1900	2219	1780	1107	639
2000 *	2358	1891	1177	679
2100 *	2497	2002	1246	719
2200	2635	2114	1315	759
2300 *	2774	2225	1384	799
2400 *	2913	2336	1453	839
2500	3051	2447	1523	879
2600 *	3190	2558	1592	919
2700 *	3329	2670	1661	959
2800	3468	2781	1730	999
2900 *	3606	2892	1799	1039
3000 *	3745	3003	1869	1079
3100 *	3884	3115	1938	1118
3200	4022	3226	2007	1158
3300 *	4161	3337	2076	1198
3400 *	4300	3448	2146	1238
3500 *	4438	3560	2215	1278
3600	4577	3671	2284	1318
3700 *	4716	3782	2353	1358
3800 *	4855	3893	2422	1398
3900 *	4993	4005	2492	1438
4000	5132	4116	2561	1478

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## HEIGH 350 mm

### VK15-35/38/L-24 (L/P)

◀ ORDER CODE

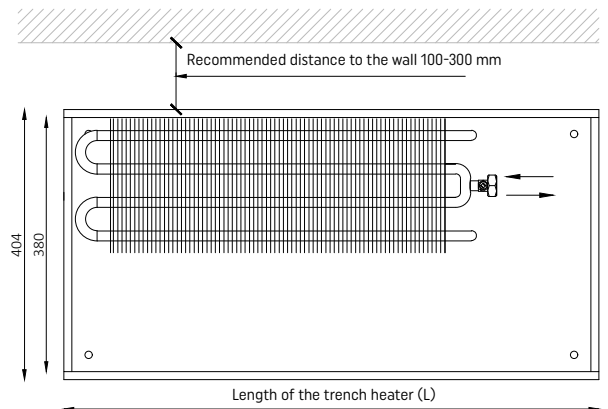
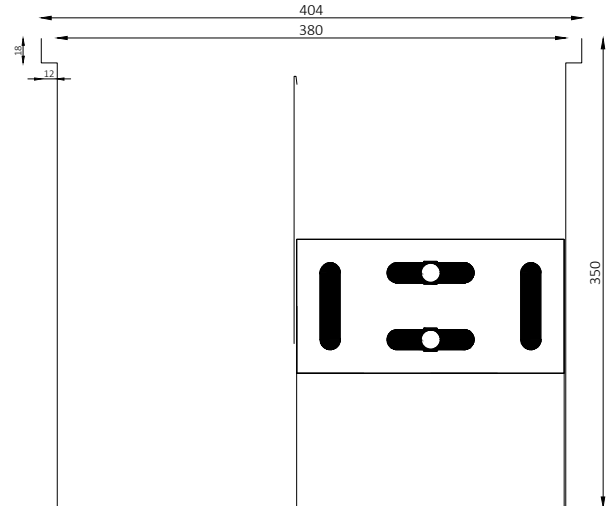
DIMENSIONS	[mm]
Trench heigh (H)	350
Trench bottom width (B)	380
Top width/Grille width (Bk)	404
Trench length (L)	800 ÷ 4000

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	820	658	409	236
900 *	984	789	491	283
1000	1148	921	573	331
1100 *	1312	1052	655	378
1200 *	1476	1184	737	425
1300	1640	1315	818	472
1400 *	1804	1447	900	520
1500 *	1968	1578	982	567
1600	2132	1710	1064	614
1700 *	2296	1841	1146	661
1800 *	2460	1973	1228	708
1900	2624	2104	1309	756
2000 *	2788	2236	1391	803
2100 *	2952	2368	1473	850
2200	3116	2499	1555	897
2300 *	3280	2631	1637	945
2400 *	3444	2762	1719	992
2500	3608	2894	1800	1039
2600 *	3772	3025	1882	1086
2700 *	3936	3157	1964	1134
2800	4100	3288	2046	1181
2900 *	4264	3420	2128	1228
3000 *	4428	3551	2210	1275
3100 *	4592	3683	2291	1322
3200	4756	3814	2373	1370
3300 *	4920	3946	2455	1417
3400 *	5084	4077	2537	1464
3500 *	5248	4209	2619	1511
3600	5412	4340	2701	1559
3700 *	5576	4472	2782	1606
3800 *	5740	4603	2864	1653
3900 *	5904	4735	2946	1700
4000	6068	4867	3028	1748

Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

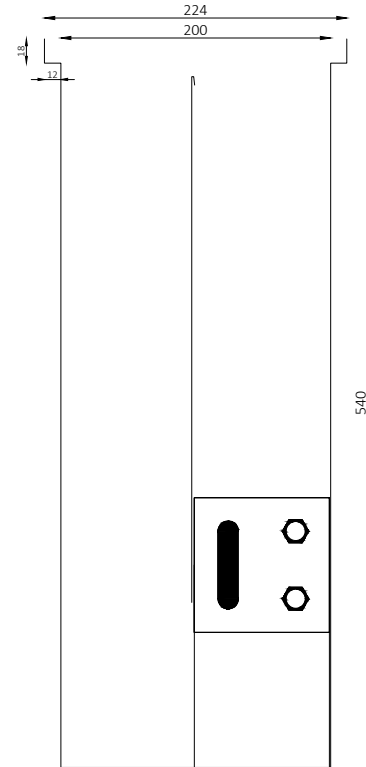


## HEIGH 540 mm

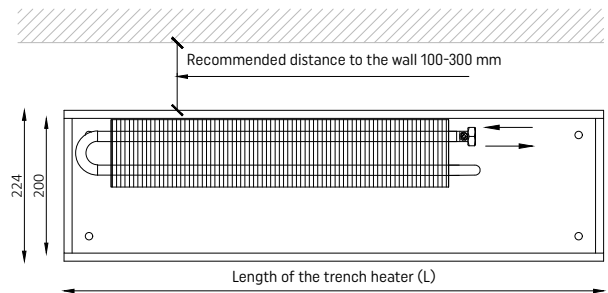
### VK15-54/20/L-22 (L/P)

◀ ORDER CODE

DIMENSIONS	[mm]
Trench heigh (H)	540
Trench bottom width (B)	200
Top width/Grille width (Bk)	224
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>



TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	613	492	306	177
900 *	736	590	367	212
1000	858	688	428	247
1100 *	981	787	489	282
1200 *	1103	885	551	318
1300	1226	983	612	353
1400 *	1349	1082	673	388
1500 *	1471	1180	734	424
1600	1594	1278	795	459
1700 *	1716	1377	856	494
1800 *	1839	1475	918	530
1900	1962	1573	979	565
2000 *	2084	1672	1040	600
2100 *	2207	1770	1101	636
2200	2329	1868	1162	671
2300 *	2452	1967	1224	706
2400 *	2575	2065	1285	741
2500	2697	2163	1346	777
2600 *	2820	2261	1407	812
2700 *	2942	2360	1468	847
2800	3065	2458	1529	883
2900 *	3188	2556	1591	918
3000 *	3310	2655	1652	953
3100 *	3433	2753	1713	989
3200	3555	2851	1774	1024
3300 *	3678	2950	1835	1059
3400 *	3801	3048	1896	1095
3500 *	3923	3146	1958	1130
3600	4046	3245	2019	1165
3700 *	4168	3343	2080	1200
3800 *	4291	3441	2141	1236
3900 *	4414	3540	2202	1271
4000	4536	3638	2264	1306



Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

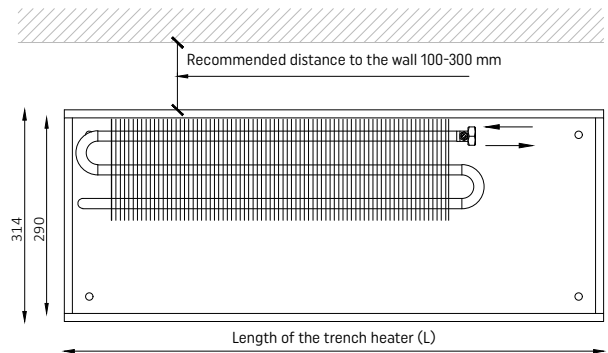
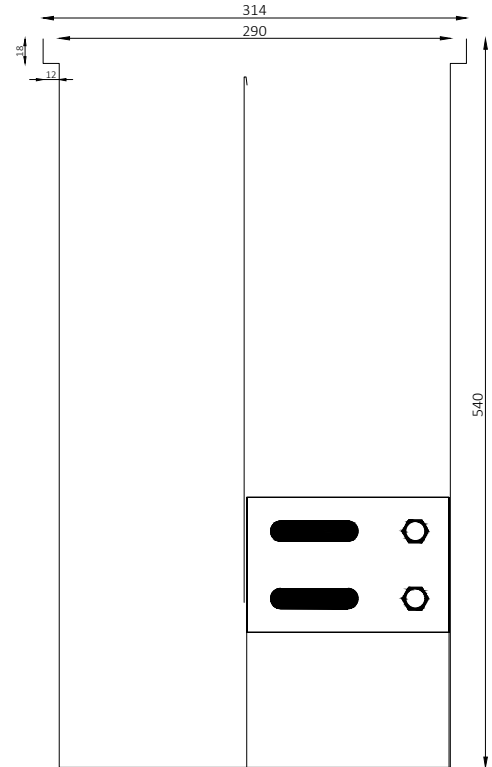
**HEIGH 540 mm**

**VK15-54/29/L-23 (L/P)**

◀ ORDER CODE

DIMENSIONS	[mm]
Trench heigh (H)	540
Trench bottom width (B)	290
Top width/Grille width (Bk)	314
Trench length (L)	800 ÷ 4000
CONNECTIONS	TYPE
Connectors	¼" female thread
Connection side	Left (L) standard, Right (P) optional
ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	<ul style="list-style-type: none"> <li>• L or F type</li> </ul>

TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	998	800	498	287
900 *	1198	960	598	345
1000	1397	1121	697	402
1100 *	1597	1281	797	460
1200 *	1796	1441	896	517
1300	1996	1601	996	575
1400 *	2196	1761	1096	632
1500 *	2395	1921	1195	690
1600	2595	2081	1295	747
1700 *	2794	2241	1394	805
1800 *	2994	2401	1494	862
1900	3194	2561	1594	920
2000 *	3393	2721	1693	977
2100 *	3593	2881	1793	1035
2200	3792	3042	1892	1092
2300 *	3992	3202	1992	1150
2400 *	4192	3362	2092	1207
2500	4391	3522	2191	1265
2600 *	4591	3682	2291	1322
2700 *	4790	3842	2390	1380
2800	4990	4002	2490	1437
2900 *	5190	4162	2590	1495
3000 *	5389	4322	2689	1552
3100 *	5589	4482	2789	1610
3200	5788	4642	2888	1667
3300 *	5988	4802	2988	1725
3400 *	6188	4962	3088	1782
3500 *	6387	5122	3187	1840
3600	6587	5283	3287	1897
3700 *	6786	5443	3386	1954
3800 *	6986	5603	3486	2012
3900 *	7186	5763	3586	2069
4000	7385	5923	3685	2127



Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

**HEIGHT 540 mm**

**VK15-54/38/L-22 (L/P)**

◀ ORDER CODE

DIMENSIONS	[mm]
Trench height (H)	540
Trench bottom width (B)	380
Top width/Grille width (Bk)	404
Trench length (L)	800 ÷ 4000

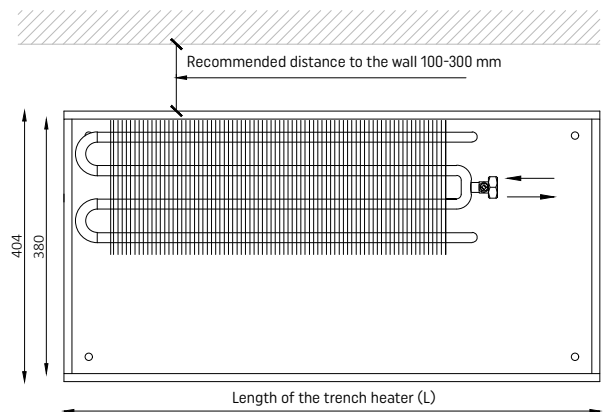
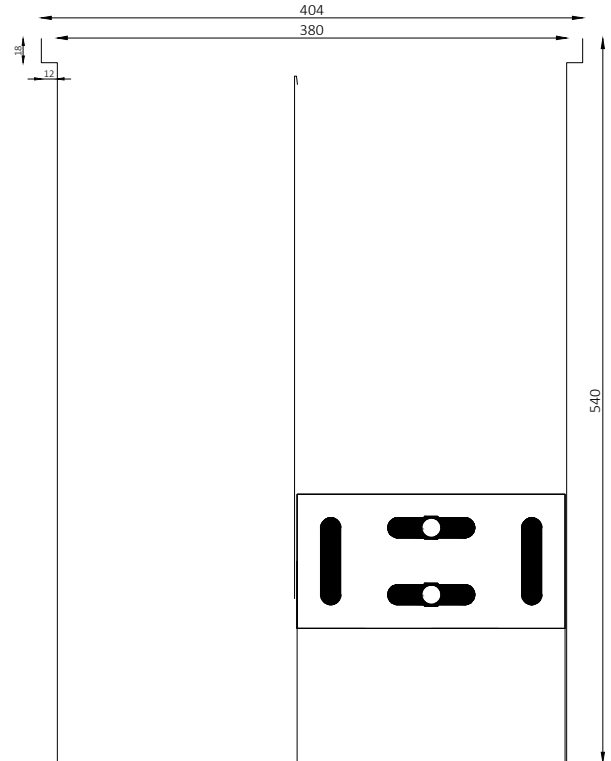
  

CONNECTIONS	TYPE
Connectors	¾" female thread
Connection side	Left (L) standard, Right (P) optional

ACCESSORIES	TYPE
Grille H=18 mm	<ul style="list-style-type: none"> <li>• Roll-up</li> <li>• Linear</li> <li>• Modular</li> </ul>
Frames	• L or F type

TRENCH LENGTH	HEATING OUTPUT $t_s/t_r$ °C			
	75/65°C	70/55°C	55/45°C	45/35°C
L [mm]	Φ [W]			
800	1398	1121	697	402
900 *	1677	1345	837	483
1000	1957	1569	976	563
1100 *	2236	1793	1116	644
1200 *	2516	2017	1255	724
1300	2795	2242	1395	805
1400 *	3075	2466	1534	885
1500 *	3354	2690	1674	966
1600	3634	2914	1813	1046
1700 *	3913	3138	1953	1127
1800 *	4193	3362	2092	1207
1900	4472	3587	2232	1288
2000 *	4752	3811	2371	1368
2100 *	5031	4035	2510	1449
2200	5311	4259	2650	1529
2300 *	5590	4483	2789	1610
2400 *	5870	4707	2929	1690
2500	6149	4931	3068	1771
2600 *	6429	5156	3208	1851
2700 *	6708	5380	3347	1932
2800	6988	5604	3487	2012
2900 *	7267	5828	3626	2093
3000 *	7547	6052	3766	2173
3100 *	7826	6276	3905	2254
3200	8106	6501	4045	2334
3300 *	8385	6725	4184	2415
3400 *	8665	6949	4324	2495
3500 *	8944	7173	4463	2576
3600	9224	7397	4603	2656
3700 *	9503	7621	4742	2737
3800 *	9783	7846	4881	2817
3900 *	10062	8070	5021	2898
4000	10342	8294	5160	2978



Standard heating outputs [W] according to EN-16430 standard for the air temperature in the room  $\theta_r = 20^\circ\text{C}$ .

\* Non-standard (NS) heater lengths are available on request.

## CORRECTIVE FACTORS FOR VK15 HEATERS

Heating output corrective factors for VK15 trench heaters for installation temperatures other than 75/65/20°C.

SUPPLY AND RETURN TEMPERATURES [°C]		ROOM AIR TEMPERATURE $\theta_r$ [°C]						
$t_s$	$t_r$	5	8	12	16	20	24	32
90	85	1,976	1,879	1,751	1,627	1,504	1,384	1,152
	80	1,895	1,799	1,673	1,550	1,429	1,311	1,082
	75	1,815	1,720	1,596	1,474	1,355	1,238	1,014
	70	1,736	1,642	1,519	1,399	1,281	1,167	0,946
85	80	1,815	1,720	1,596	1,474	1,355	1,238	1,014
	75	1,736	1,642	1,519	1,399	1,281	1,167	0,946
	70	1,658	1,565	1,444	1,325	1,209	1,096	0,880
	65	1,580	1,489	1,369	1,252	1,138	1,027	0,815
80	75	1,658	1,565	1,444	1,325	1,209	1,096	0,880
	70	1,580	1,489	1,369	1,252	1,138	1,027	0,815
	65	1,504	1,414	1,296	1,181	1,069	0,959	0,751
	60	1,429	1,340	1,224	1,110	1,000	0,893	0,689
75	70	1,504	1,414	1,296	1,181	1,069	0,959	0,751
	65	1,429	1,340	1,224	1,110	1,000	0,893	0,689
	60	1,355	1,267	1,152	1,041	0,933	0,827	0,628
	55	1,281	1,195	1,082	0,973	0,867	0,763	0,568
70	65	1,355	1,267	1,152	1,041	0,933	0,827	0,628
	60	1,281	1,195	1,082	0,973	0,867	0,763	0,568
	55	1,209	1,124	1,014	0,906	0,802	0,701	0,511
	50	1,138	1,055	0,946	0,840	0,738	0,640	0,455
65	60	1,209	1,124	1,014	0,906	0,802	0,701	0,511
	55	1,138	1,055	0,946	0,840	0,738	0,640	0,455
	50	1,069	0,986	0,880	0,776	0,676	0,580	0,400
	45	1,000	0,919	0,815	0,713	0,616	0,522	0,348
60	55	1,069	0,986	0,880	0,776	0,676	0,580	0,400
	50	1,000	0,919	0,815	0,713	0,616	0,522	0,348
	45	0,933	0,853	0,751	0,652	0,557	0,466	0,297
	40	0,867	0,789	0,689	0,592	0,499	0,411	0,249
55	50	0,933	0,853	0,751	0,652	0,557	0,466	0,297
	45	0,867	0,789	0,689	0,592	0,499	0,411	0,249
	40	0,802	0,726	0,628	0,533	0,443	0,358	0,203
	35	0,738	0,664	0,568	0,477	0,390	0,307	0,160
50	45	0,802	0,726	0,628	0,533	0,443	0,358	0,203
	40	0,738	0,664	0,568	0,477	0,390	0,307	0,160
	35	0,676	0,604	0,511	0,422	0,338	0,259	0,120
45	40	0,676	0,604	0,511	0,422	0,338	0,259	0,120
	35	0,616	0,545	0,455	0,369	0,288	0,212	0,083

## HEATING OUTPUT CORRECTIVE FACTORS FOR VK15 HEATRES ACCORDING TO THE GRILLE TYPE

GRILLE TYPE	AIRFLOW	CORRECTIVE FACTOR
Roll-up double T-bar profile aluminium grille - 13 mm gap	67%	1,00
Roll-up double T-bar profile aluminium grille - 8 mm gap	63%	0,99
Roll-up closed profile aluminium grille	62%	1,00
Roll-up wooden grille	52%	0,98
Modular snap on profile aluminium grille	62%	0,97
Linear snap on profile aluminium grille	62%	1,08
Linear stainless steel grille	71%	1,09

## DECLARED PROPERTIES

Maximum permissible operating pressure: 1,6 MPa

Test pressure: 2,08 MPa

Maximum hydraulic pressure: 2,70 MPa

Maximum operating temperature: 110°C

## VK15 WATER CAPACITY

TRENCH LENGTH L [mm]	HEATER TYPE					
	VK15-7,5/20/L-12 VK15-7,5/25/L-12 VK15-9/20/L-12 VK15-9/25/L-12 VK15-11/20/L-12 VK15-11/25/L-12	VK15-7,5/29/L-13 VK15-9/29/L-13 VK15-11/29/L-13	VK15-7,5/38/L-14 VK15-9/38/L-14 VK15-11/38/L-14	VK15-14/20/L-22 VK15-18/20/L-22 VK15-25/20/L-22 VK15-14/25/L-22 VK15-18/25/L-22 VK15-25/25/L-22 VK15-35/20/L-22 VK15-54/20/L-22	VK15-14/29/L-23 VK15-18/29/L-23 VK15-25/29/L-23 VK15-18/29/L-23 VK15-35/29/L-23 VK15-54/29/L-23	VK15-14/38/L-24 VK15-18/38/L-24 VK15-25/38/L-24 VK15-35/38/L-24 VK15-54/38/L-24
	WATER CAPACITY [dm <sup>3</sup> ]					
800	0,24	0,37	0,49	0,49	0,75	1,03
1000	0,30	0,46	0,61	0,61	0,93	1,28
1300	0,39	0,60	0,80	0,80	1,22	1,65
1600	0,49	0,74	0,99	0,99	1,50	2,03
1900	0,58	0,88	1,18	1,18	1,78	2,40
2200	0,67	1,02	1,36	1,36	2,06	2,78
2500	0,77	1,16	1,55	1,55	2,34	3,15
2800	0,86	1,30	1,74	1,74	2,62	3,53
3200	0,99	1,49	1,99	1,99	3,00	4,03
3600	1,11	1,68	2,24	2,24	3,37	4,53
4000	1,24	1,86	2,49	2,49	3,74	5,03

## PRESSURE LOSS

VK15-7,5/20/L-12  
VK15-7,5/25/L-12

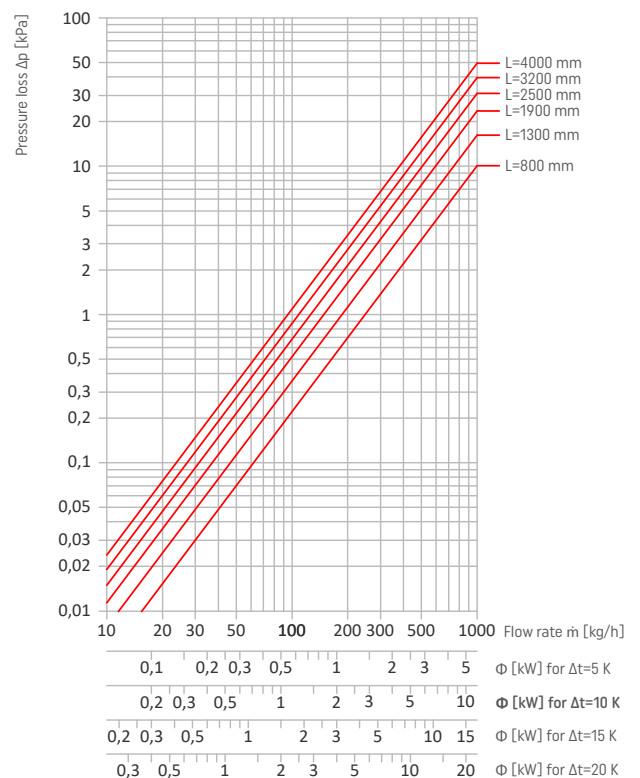
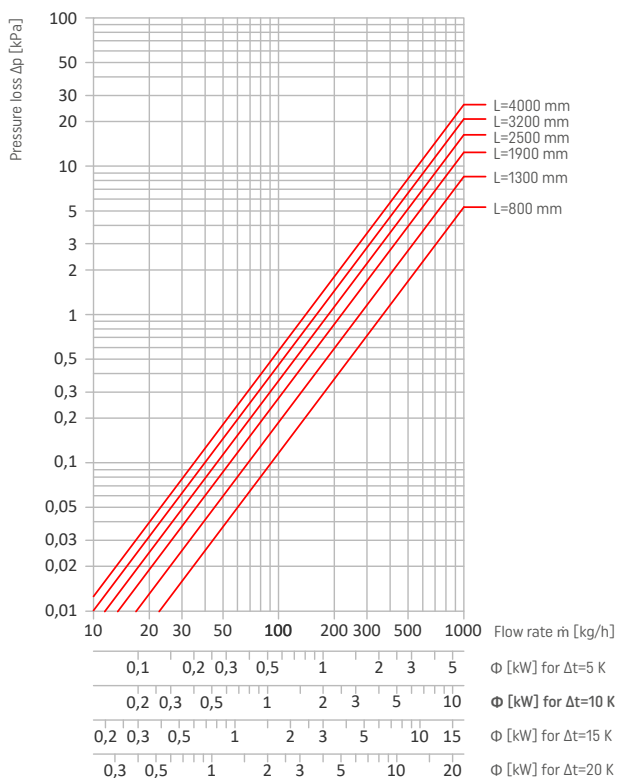
VK15-9/20/L-12  
VK15-9/25/L-12

VK15-11/20/L-12  
VK15-11/25/L-12

VK15-7,5/29/L-13

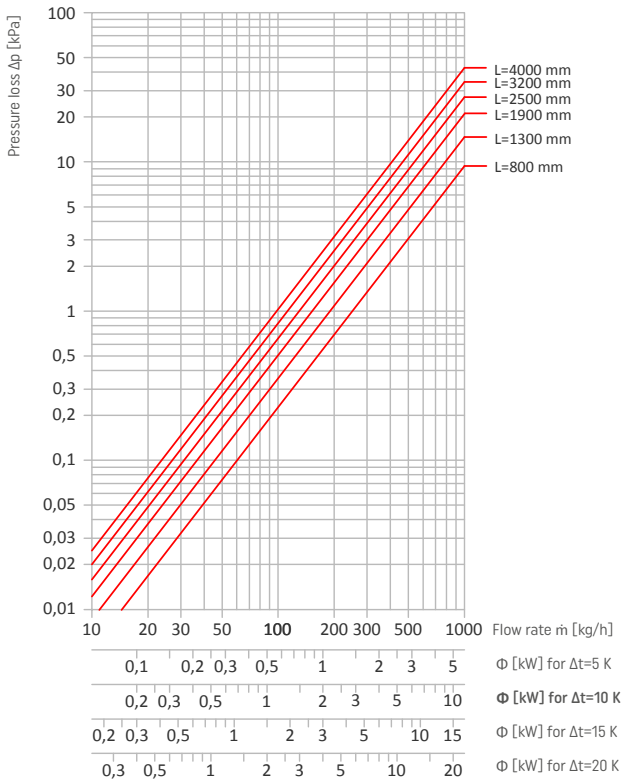
VK15-9/29/L-13

VK15-11/29/L-13

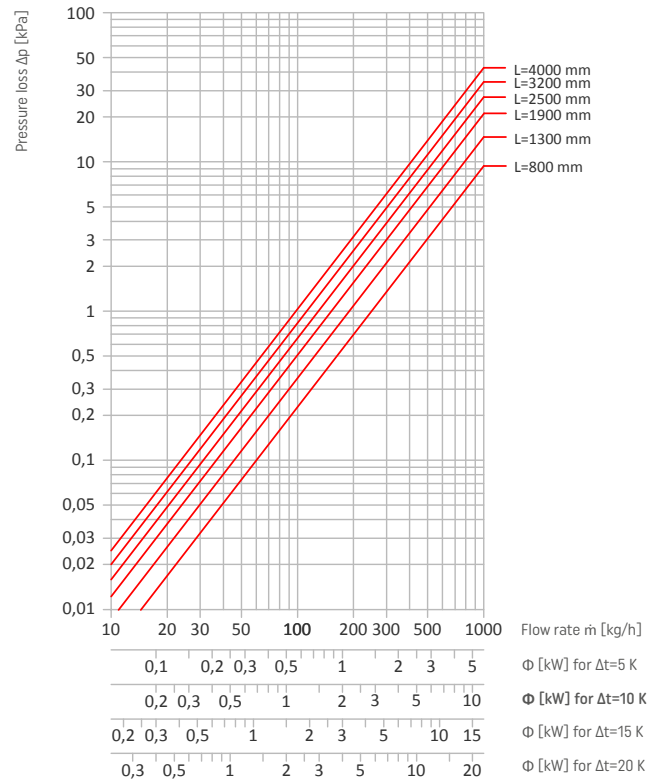


## PRESSURE LOSS

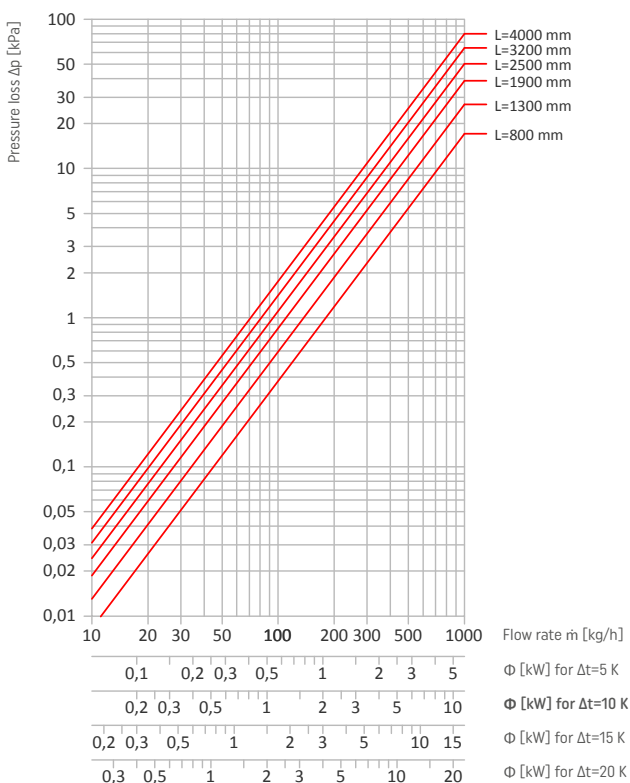
VK15-7,5/38/L-14 | VK15-9/38/L-14 | VK15-11/38/L-14



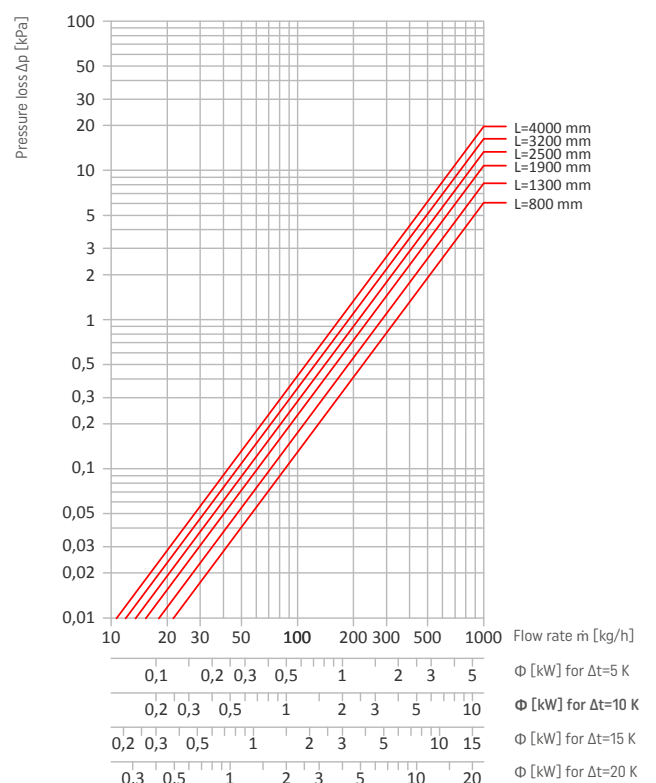
VK15-14/20/L-22 | VK15-18/20/L-22 | VK15-25/20/L-22  
 VK15-14/25/L-22 | VK15-18/25/L-22 | VK15-25/25/L-22  
 VK15-35/20/L-22 | VK15-54/20/L-22



VK15-14/29/L-23 | VK15-18/29/L-23 | VK15-25/29/L-23  
 VK15-35/29/L-23 | VK15-54/29/L-23



VK15-14/38/L-24 | VK15-18/38/L-24 | VK15-25/38/L-24  
 VK15-35/38/L-24 | VK15-54/38/L-24



## HOW TO SELECT A HEATER?

### Calculation example for a heater: VK15-9/20/250

Heating output for installation temperatures 75/65/20°:  $\Phi=590$  W

Installation temperatures:  $t_s/t_r/\theta_i = 65/55/20^\circ\text{C}$

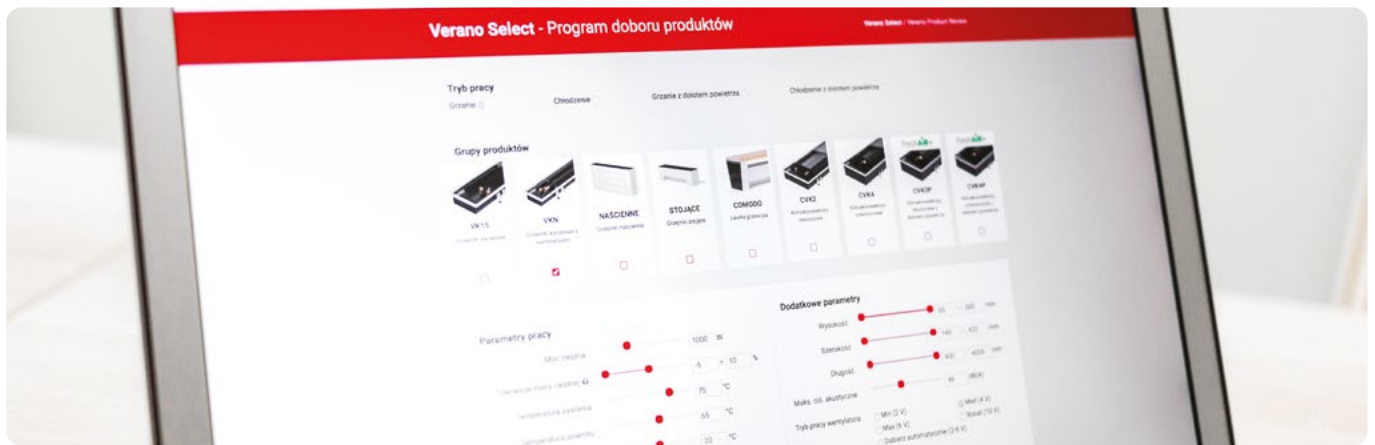
- METHOD 1**  
based on corrective factors

For the listed temperatures, read the corrective factor. In this case, according to the table on page 36, it is 0.738. Then multiply the heater's heating output for the

parameters 75/65/20 ° C by the read correction factor:

Heating output for the parameters 65/55/20°C:  $\Phi = 590 \cdot 0,738 = 435$  W

- METHOD 2**  
Based on **VERANO SELECT** selection program



The VERANO SELECT program enables the practical selection of a heater for any operating parameters, depending on the required heating output in the room.

The program also enables to create a product group lists and list export to PDF.

Scan the QR code:



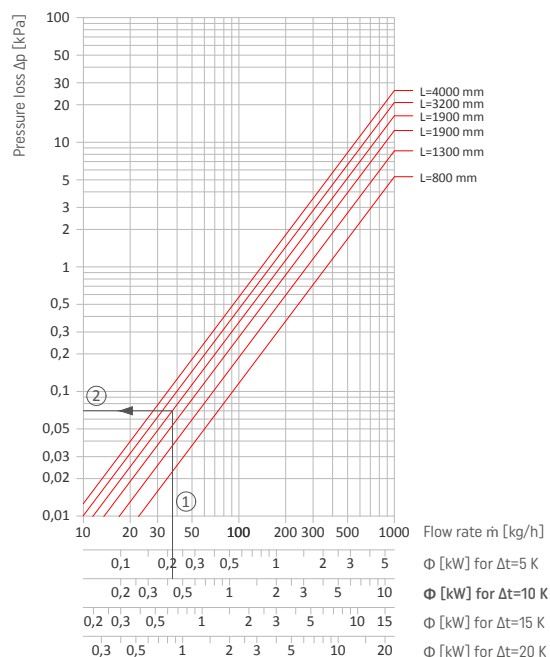
The product selection program is available at [www.select.verano-global.com](http://www.select.verano-global.com)

## PRESSURE LOSS

Based on the heater selection data, the heating output **435 W** was determined for the parameters 65/55/20° C.

Cooling down temperature of the heating medium is  $\Delta t=10^\circ\text{C}$ .

- Using the axis for a cooling temperature of 10 ° C, draw a vertical line from the heat output of 0.44 kW to the intersection with the diagonal line representing the length of the heater  $L = 2500$  mm.
- Draw a horizontal line and read the pressure loss value of **0,07 kPa**.



## HEATER CONTROL

Depending on the needs, it is possible to control the heaters locally with the VER-15S regulator or control the heaters located in different zones using the VER-8S WiFi and VER-16S WiFi controllers. The undoubted advantage of VER-8S WiFi and VER-16S WiFi controllers is a possible to expand the system with other peripherals communicating wirelessly with controllers, as well as the ability to control via a web application or smartphone application.



### VER-15S CONTROLLER

- room temperature control
- manual, daily, weekly program
- built-in temperature sensor
- 3mm glass front panel with physical buttons
- battery powered (2 x AA 1.5 V)
- surface mounting



### VER-8S WIFI CONTROLLER

- temperature control in max. 8 zones
- wireless temperature sensor
- individual operating mode for each zone
- control via a web application and for smartphones
- physical buttons
- powered by 230 V AC
- installation in an electrical box DN 60 mm



### VER-16S WIFI CONTROLLER

- temperature control in max. 16 zones
- built-in temperature sensor
- individual operating mode for each zone
- control via a web application and for smartphones
- front panel made of 2mm glass with a large, color touch screen
- powered by 230 V AC
- installation in an electrical box DN 60 mm

## CONTROL METHODS OF VK15 TRENCH HEATERS

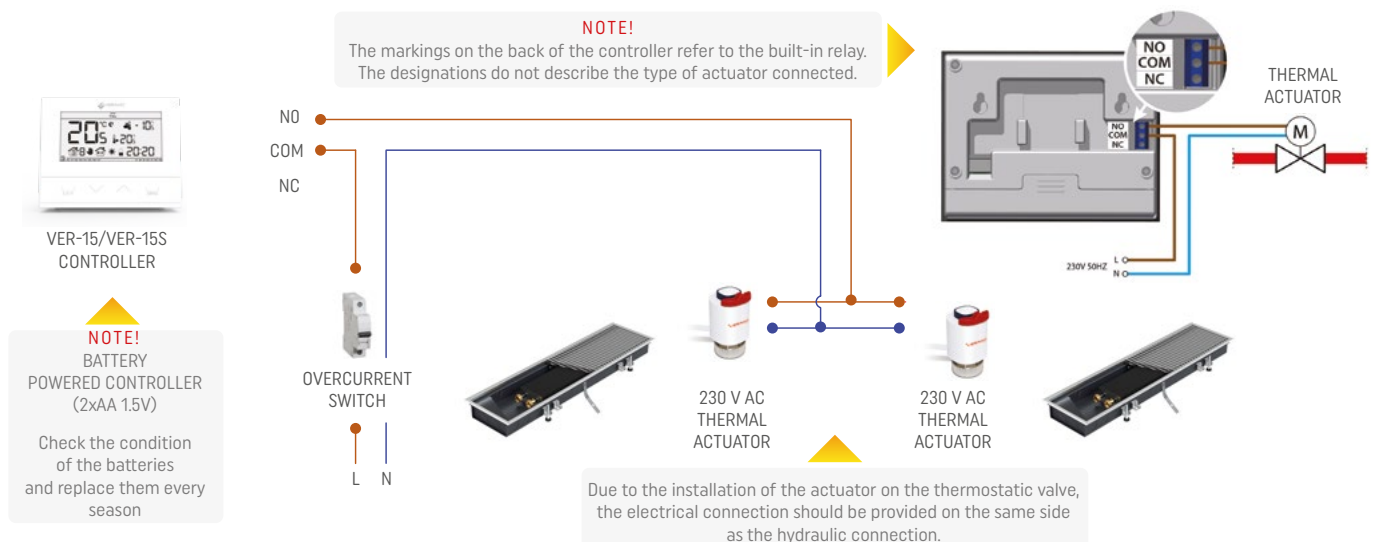
The basic method of VK15 trench heater control is the installation of the head with a capillary, which allows the temperature sensor and the adjuster knob to be placed on the room wall. Standard thermostatic heads cannot be used in trench heaters - reading the temperature directly in the heater's trench will prevent proper adjustment of its operation, which will result in underheating of the room.

The use of a controller and an actuator allows for simultaneous control of several trench heaters and setting their work schedules. Cabling is

required between the actuators, controller and power source. The controller measures the room temperature using the built-in sensor and maintains the set temperature value - when it drops below the set value, the thermal actuator connected to the controller will open the valve. The room temperature controller should be located so that the temperature measurement is as accurate as possible - when planning the assembly point, choose a place protected against the influence of solar radiation or other sources of heat or cold. The height of the controller should be about 1.5 m above the floor.

### ATTENTION!

Electrical connections may only be made by qualified electrician following relevant EN standards. Supply voltage can only be enabled after validating all connections with diagram.



Exemplary wiring diagram for VK15 trench heaters with the use of a room temperature regulator and NC type ON / OFF actuators



## WIRELESS CONTROL SYSTEM FOR VK15 TRENCH HEATERS

The wireless control system allows you to adjust the maximum of:

- 8 different zones when using VER-8S WiFi controllers
- 16 different zones when using the VER-16S WiFi controller.

Each zone can accommodate up to 6 wireless VERSTT actuators controlling the operation of VK15 trench heaters.

Each of the heating zones can be assigned its own individual operating mode (constant temperature, time limit or 6 different work schedules). The controllers can update the software via the USB port. The controller is to be installed in the installation box ø=60mm.

Additional devices available as part of the wireless system:

- VET-CT temperature sensor
- VER-RP room controller
- VER-RP230 room controller (230V powered)
- VER-COO window opening sensor (max. 6 pcs in the zone)
- VER-CTZ outside temperature sensor

The VER-8S WiFi controller, VER-16S WiFi and the VER-RP230 room controller are powered directly from the 230 V AC. Other devices of the wireless system are battery powered. The VER-8S WiFi controller comes with a wireless temperature sensor.

From the level of the web application (verano.emodul.eu) or smartphone application (downloadable from the Google Play store) it is possible to remotely control the controllers, including:

- preview of the current parameters of the controller,
- editing parameters available from the controller level,
- access to temperature history,
- access to alarm history,
- the ability to support many internet modules from one user account,
- activation of e-mail notifications about controller alarms.



An exemplary connection diagram of several heaters located in different zones / rooms with the use of the main wireless controller and local temperature controllers / sensors and other devices of the wireless system.

NOTE: Controllers and other battery-powered devices should be checked for battery condition. Battery life up to 2 years of operation.

NOTE: Electrical connections may only be made by qualified electrician following relevant EN standards. Supply voltage can only be enabled after validating all connections with diagram.connections with diagram.

## HEATER ASSEMBLY AND MAINTENANCE

Before starting the installation work, prepare a hole in the floor, the dimensions of which should exceed the dimensions of the heater by about 40-50 mm on each side. The depth of the hole should be planned so that the grille surface is flush with the anticipated floor finish. The leveling of the trench heater is to be done by using external leveling feet. The feet should rest on the structural layer of the floor. The next step is to install the screws and dowels fixing the trench to the concrete screed. Due to the required strength, it is recommended to use a material with a compressive strength coefficient of at least 70 kPa to insulate the heater trench, e.g. EPS70. Free spaces between the insulation and the trench should be filled with low-expansion foam. The trench heater should be installed after removing a heating kit from it. The heater is mounted so that the heat exchanger is on the side of the wall/window. Convector are not universal - please decide the connection side before ordering. For the time of finishing works, it is recommended to cover the casing with an assembly cover that protects the

heating elements against mechanical damage and dirt. Before making a screed on which the edge of the trench is based, make sure that all connections for the heating and control systems have been connected to the heater. Installation and electrical cables can be led to the trench from the short or long side. After connecting the heater hydraulically and electrically, check the correctness of the control system and remove any contamination from the inside of the casing. The screed on which the edge of the trench will rest should be at least 50 mm high. When installing the trench heater, it is absolutely necessary to remember about the mounting struts attached to the heater, which protect the casing and the trench edge against deformation. An additional application of an expansion mat to the side of the heater casing reduces the contact surface between the concrete and the heater casing.

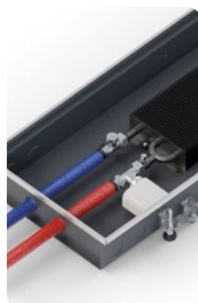
An element of additional equipment allowing trench edge is L and F type frames, mounted during floor finishing works. All assembly work should be performed by qualified personnel: construction, electrical and installation industry employees. Trench heaters can optionally be equipped with an adjustable edge. It allows for leveling the discrepancy between the expected and final level of floor finish without the need to hammer the floor. When operating a trench heater during the heating season, it should not be covered with a carpet, furniture or curtains. The grilles are resistant to pressure and abrasion for low intensity pedestrian traffic. Increased pressure on the bars of the grille should be avoided, for example by placing pieces of furniture on them. Due to the influence of contamination on the heater's efficiency, periodic cleaning of the inside of the trench is recommended.

## EXAMPLE OF CONNECTION OF VK15 HEATERS TO HEATING INSTALLATION

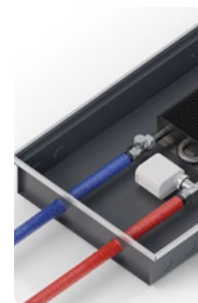
Examples of connection of VK15 trench heaters to the central heating installation with a wireless actuator and a straight connection are shown in the pictures:



VK15-7,5/20/L-12  
VK15-7,5/25/L-12  
VK15-9/20/L-12  
VK15-9/25/L-12  
VK15-11/20/L-12  
VK15-11/25/L-12



VK15-7,5/29/L-13  
VK15-9/29/L-13  
VK15-11/29/L-13



VK15-7,5/38/L-14  
VK15-9/38/L-14  
VK15-11/38/L-14



VK15-14/20/L-22  
VK15-18/20/L-22  
VK15-25/20/L-22  
VK15-35/20/L-22  
VK15-54/20/L-22



VK15-14/25/L-22  
VK15-18/25/L-22  
VK15-25/25/L-22



VK15-14/29/L-23  
VK15-18/29/L-23  
VK15-25/29/L-23



VK15-14/38/L-24  
VK15-18/38/L-24  
VK15-25/38/L-24



VK15-35/29/L-23  
VK15-54/29/L-23



VK15-35/38/L-24  
VK15-54/38/L-24

## Roll-up grille double T-bar profile

**STANDARD:**

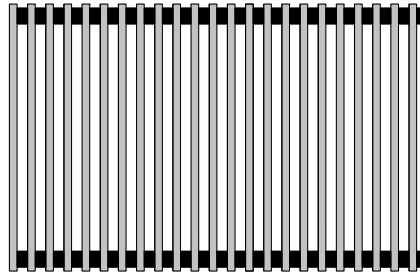
Spacers 17 mm,  
Distance between the bars - 13 mm.  
Spacers made of black PVC.

**OPTION:**

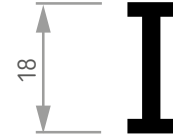
Spacers are available in other colours and size:

- grey 13 mm, 8 mm.

Maximum length of one grille section is 6 m.



TOP VIEW



SINGLE BAR CROSS SECTION

GRILLE TYPE	COLOUR	ORDER CODE
Roll-up grille, double T-bar profile - natural aluminium	Natural aluminium	ZDW-1,8/B/L
	Satin	ZADWS-1,8/B/L
Roll-up grille, double T-bar profile - anodized aluminium	Stainless steel	ZADWST-1,8/B/L
	Gold	ZADWZ-1,8/B/L
	Black	ZADWC-1,8/B/L

## Roll-up grille closed profile

**STANDARD:**

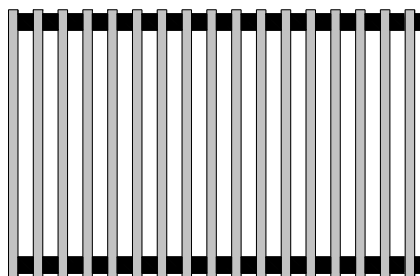
Spacers 13 mm,  
Distance between the bars - 13 mm.  
Spacers made of black PVC.

**OPTION:**

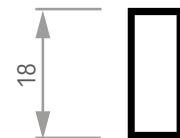
Spacers are available in other colours and size:

- grey 17 mm, 8 mm,

Maximum length of one grille section is 6 m.



TOP VIEW



SINGLE BAR CROSS SECTION

GRILLE TYPE	COLOUR	ORDER CODE
Roll-up grille, closed profile - natural aluminium	Natural aluminium	ZAL-1,8/B/L
Roll-up grille, closed profile - anodized aluminium	Satin	ZAALS-1,8/B/L
	Stainless steel	ZAALST-1,8/B/L

## Roll-up wooden grille (made of natural wood)

**STANDARD:**

Spacers 13 mm  
Distance between the bars - 13 mm  
Spacers made of black PVC.

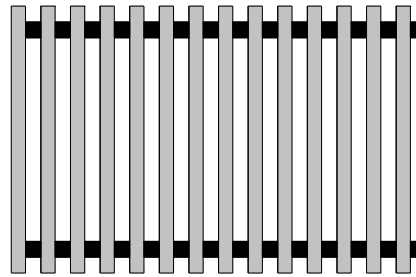
**OPTION:**

Spacers are available in other colours and size:

- wooden spacers (beech) 17 mm
- grey 17 mm, 8 mm

Maximum length of one grille section is 6 m.

It is possible to make a corner grille for corner section of the heaters at an angle of 90° (herringbone grille). The corner grille can be made only if it is ordered with a heater at the same time.



TOP VIEW



SINGLE BAR CROSS SECTION



OAK



ASH



BEECH



SAPOLI



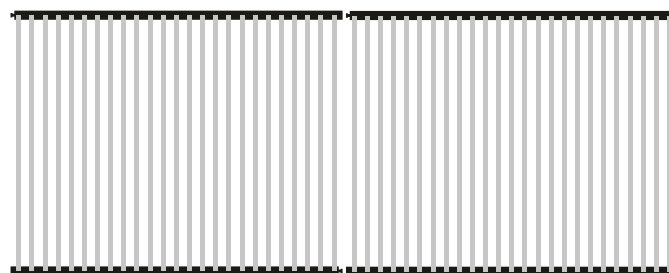
GRILLE TYPE	COLOUR	ORDER CODE
Roll-up wooden grille	Oak	ZD-1,8/B/L
	Ash	ZJ-1,8/B/L
	Beech	ZB-1,8/B/L
	Sapeli	ZS-1,8/B/L

## Modular grille (made of aluminium)

THE GRILLE IS AVAILABLE IN TWO VERSIONS:

- natural aluminium,
- anodized aluminium.

The grilles joints are made of black PVC only.



TOP VIEW



CROSS SECTION

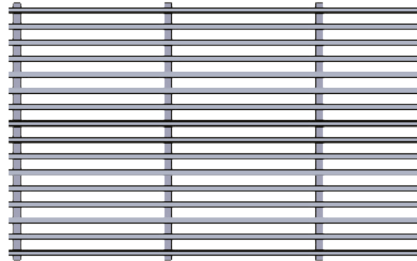
GRILLE TYPE	COLOUR	ORDER CODE
Modular grille - natural aluminium	Natural aluminium	MPZ-1,8/B/L
Modular grille - anodized aluminium	Satin	MPZAS-1,8/B/L
	Stainless steel	MPZAST-1,8/B/L

## Linear grille

GRILLE ENTIRELY MADE OF ALUMINIUM.

The grille is available in the following variants:

- natural aluminium  
(cross – bar joiners are coated in black RAL 9005),
- aluminium coated in any RAL colour  
(grille entirely coated in RAL),
- anodized aluminium  
(cross – bar joiners are coated in black RAL 9005).



TOP VIEW



CROSS SECTION

It is possible to make a corner grille for corner section of the heaters at an angle of 90° and others.

The corner grille can be made only if it is ordered with a heater at the same time.

Maximum length of one grille is 3 m.



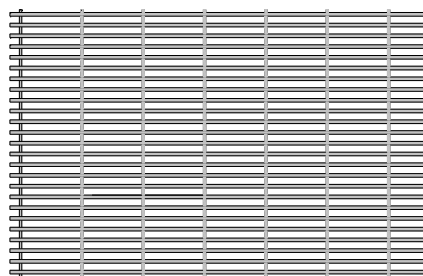
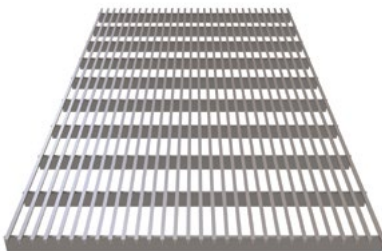
GRILLE TYPE	COLOUR	ORDER CODE
Linear grille, snap profile - natural aluminium	Natural aluminium	PZW-1,8/B/L
Linear grille, snap profile - anodized aluminium	Satin	PZWAS-1,8/B/L
	Stainless steel	PZWAST-1,8/B/L
Linear grille, snap profile - any RAL colour	RAL colour	PZWR-1,8/B/L

## Stainless steel linear grille

THE GRILLE IS AVAILABLE ONLY AS A RIGID VERSION.

Maximum length of one section of the grille is 2 m.

Grille length longer than 2 m are made of several elements of equal lengths.



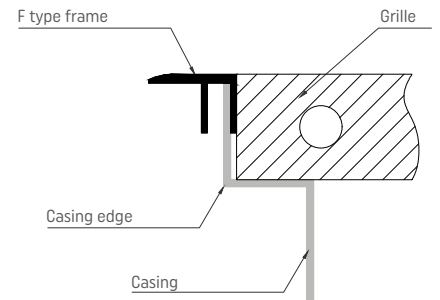
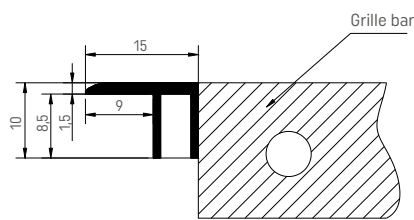
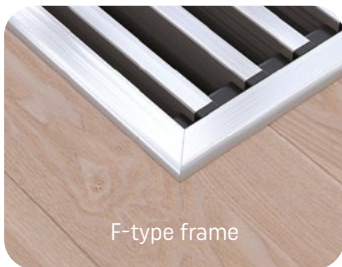
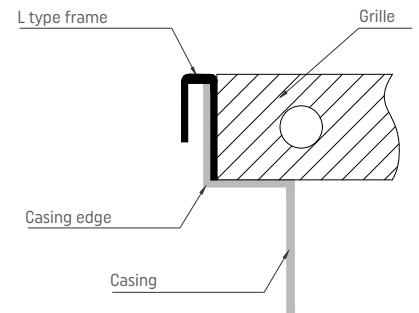
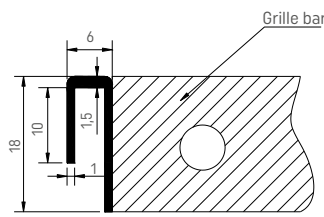
TOP VIEW



CROSS SECTION

GRILLE TYPE	COLOUR	ORDER CODE
Stainless steel linear grille	Stainless steel	SN-1,8/B/L

## FRAMES type L or F



GRILLE TYPE	FRAMES F	FRAMES L
Natural aluminium	OF-B/L	OL-B/L
Satin	OFS-B/L	OLS-B/L
Stainless steel	OFST-B/L	OLST-B/L
Gold	OFZ-B/L	OLZ-B/L
Black	OFC-B/L	OLC-B/L
Any RAL colour	OFRAL-B/L	OLRAL-B/L

## ADDITIONAL EQUIPMENT FOR TRENCH HEATERS

### ZPP Raised floor kit

Kit contains:

- 1x support
- 2x expansion bolt with a screw
- 4x nut and washer

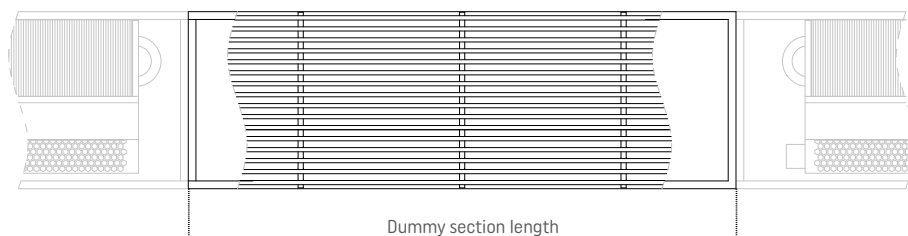
ZPP kit allow to level the unit up by 50 mm.  
Other heights on request.



## EXTENSION OR ADDITIONAL DUMMY SECTION OF THE TRENCH

First step of heating and cooling units selection is choosing the standard unit with required heating and cooling output. Sometimes, standard lengths of units does not come together with architectural vision of the room. For this kind of situation we can offer customized solutions, such as:

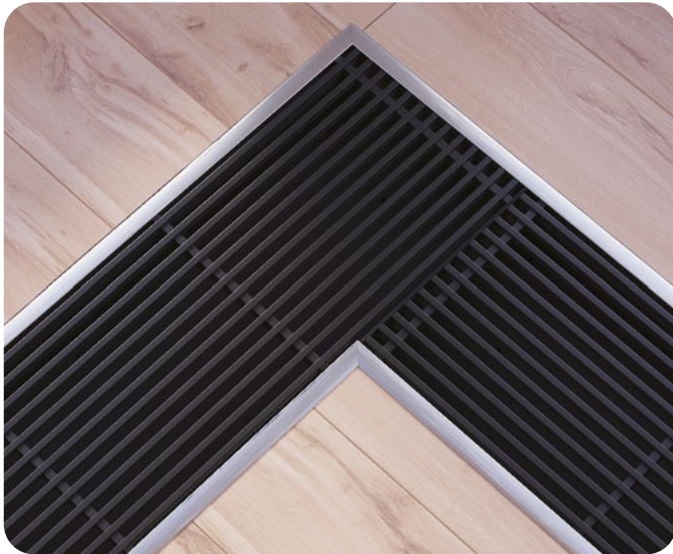
- extension of the heater casing to the required length,
- making a separate dummy section of the trench equipped with all necessary assembly elements.



Separate dummy section is not compatibly for heat exchanger or fan installation.

Maximum dummy section length is 4000 mm.  
Grilles and frames can be also customized.

**CORNER TRENCH AND GRILLE OPTIONS**



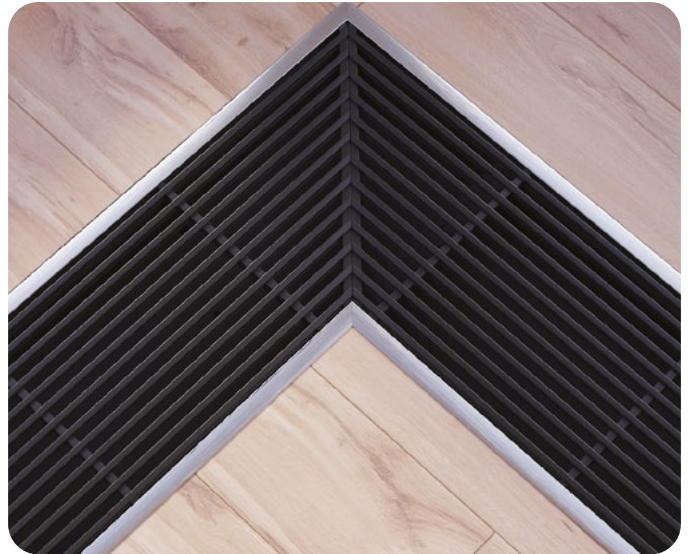
| Corner trench with linear grille  
FRAMES:  
F Type



| Corner trench with cross-bar grille.  
FRAMES:  
F Typ



| Corner trench with cross-bar grille. Herringbone grille shape.  
FRAMES:  
F Typ



| Corner trench with linear grille. Herringbone grille shape.  
FRAMES:  
F Typ

**Anodized aluminium colours**



F and L frames are available in exact the same anodizing colours.

**RAL Palette**



Frame and linear aluminium grilles are available in any RAL colour at additional surcharge.

# VERANO

G L O B A L



**VERANO**  
GLOBAL

**VK15**  
NATURAL CONVECTION  
TRENCH HEATERS

**VK5**  
Natural convection  
trench heaters



**VERANO**  
GLOBAL

**VKN**  
FAN ASSISTED  
TRENCH HEATERS

2020/06

**VKN**  
Fan assisted  
trench heaters



**VERANO**  
GLOBAL

**COMODO  
CALIENTE  
STANDARD**  
WALL-MOUNTED AND FLOOR-MOUNTED CONVECTORS

2022/11


**COMODO CALIENTE STANDARD**  
Wall/Floor-mounted  
convectors



**VERANO**  
GLOBAL

**CVK**  
TRENCH HEATING AND COOLING  
UNITS

**CVK climaconvectors**  
Trench heating  
and cooling units

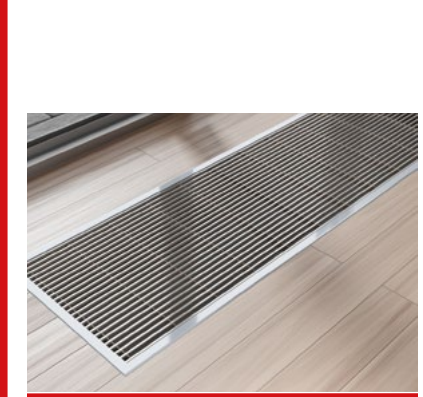


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**VERANO**  
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**FRESHAIR+**  
FRESH AIR SUPPLY  
SYSTEM

**FRESHAIR+**  
Fresh air supply  
system



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**PRICE LIST**

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**VERANO GLOBAL Sp. z o.o.**

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