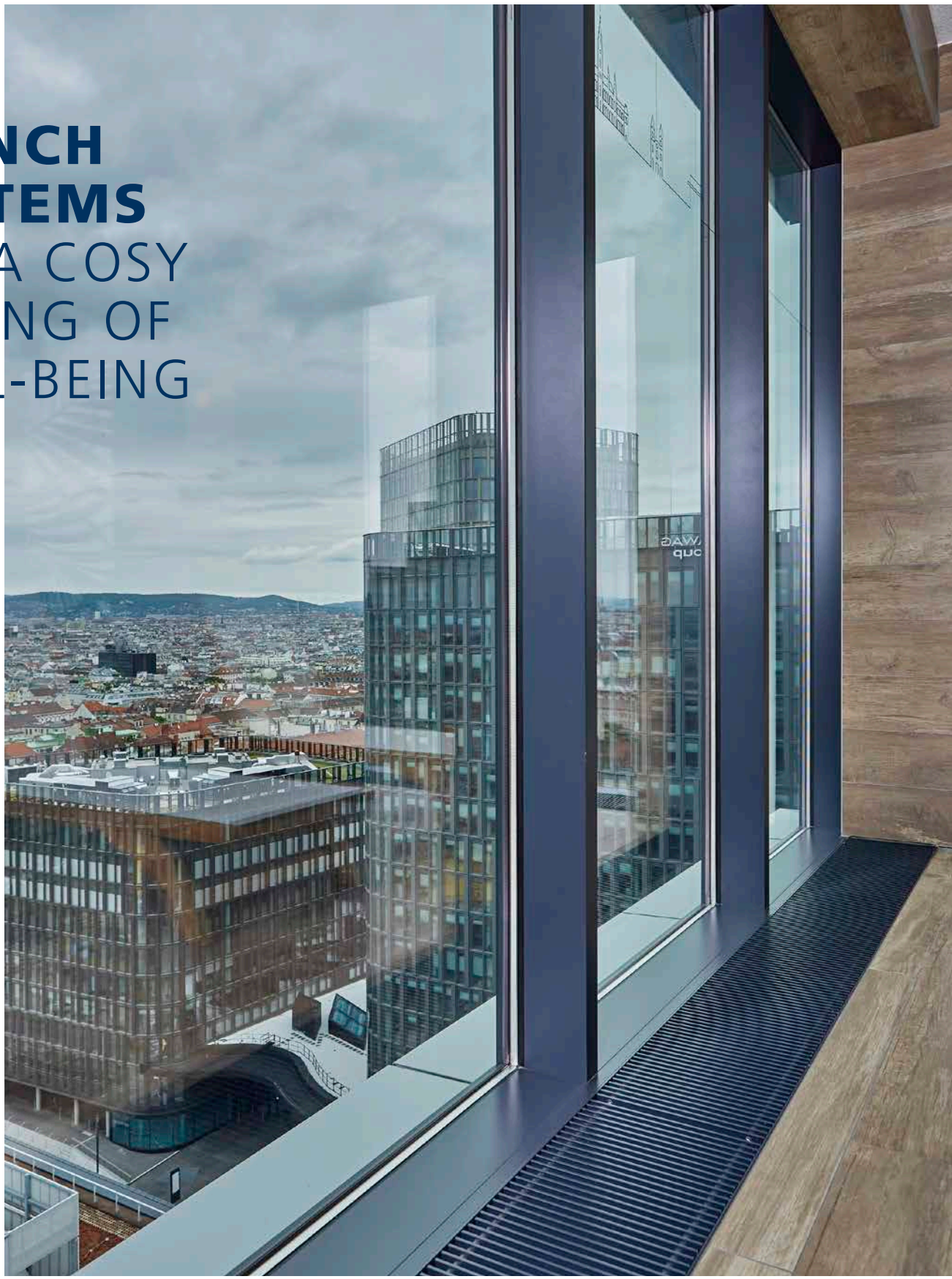
TRENCH SYSTEMS
FOR A COSY FEELING OF WELL-BEING



GENAU MEIN KLIMA

KAMPMANN

TRENCH SYSTEMS
FOR A COMFORTABLE INDOOR CLIMATE

Trench systems are the first choice for challenging spaces with floor-to-ceiling windows. Conventional radiators often obstruct the view and draw unwanted attention. They often do not harmonise with the architectural vision.

Kampmann trench systems are installed in the floor underneath the window. They blend into the overall appearance and provide effective temperature control. Full room heating and cooling, supplementary heat provision, cold air screening and façade ventilation: Kampmann trench systems supply an individual climate of well-being.

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WE HAVE BEEN THE MARKET LEADER FOR OVER 50 YEARS

With 950 employees worldwide, Kampmann is one of the leading players in the building services industry. Kampmann is the market leader in trench systems and plays a pioneering role in different market segments with its climate systems for heating, cooling and ventilation.

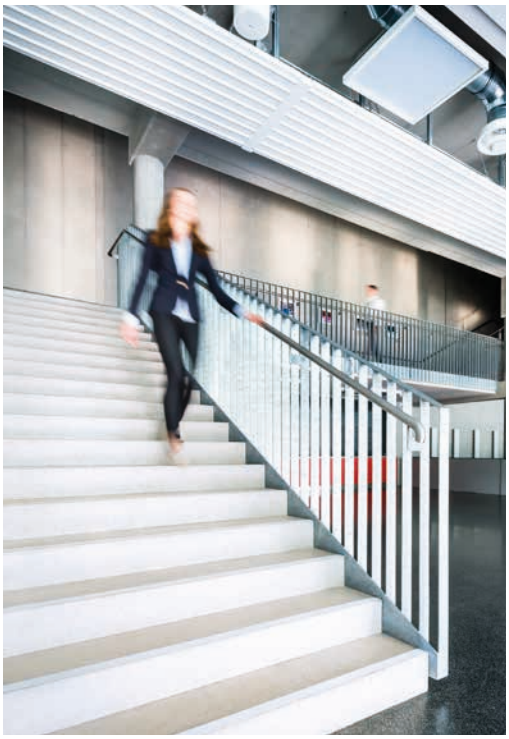
The Kampmann vision is to deliver the ultimate in quality in design and production. All products are developed in the company's own Research and Development Centre (FEC), and are produced in Germany and Poland. The family-managed company has been operating successfully on the market for almost 50 years.

Its strength lies in series production. But also in the manufacture of made-to-measure, project-based non-standard solutions.

950
employees work for the Kampmann Group worldwide.

We have a leading position on the market with our climate systems for **heating, cooling and ventilation.**

16
global sites secure our success in the future. Kampmann is one of the leading companies in the building services sector.



GENAU MEIN KLIMA

KAMPMANN

WHICH TRENCH SYSTEM DO I NEED?

REQUIREMENT	KATHERM	DESCRIPTION
"I would like to be able to heat and then cool."	**HK**	The **Katherm HK** permits demand-led heating from the floor. It also features a cooling function. With its length increments, the Katherm HK is the right solution to meet the most diverse building requirements. The EC tangential fan runs silently and is extremely energy-efficient.
"I would like to heat in a low temperature system."	**QK**	The **Katherm QK** guarantees effective cold air screening. It is optimised for use with low water temperatures. The extra-long EC fan guarantees high heat outputs with quiet operation. The Katherm QK is immediately available in standard lengths. Tailor-made units are possible.
"I have very little space."	**QK NANO**	The **Katherm QK nano** delivers high heat outputs from extremely compact dimensions. With a trench height of only 70 mm and a trench width of only 165 mm, it is used wherever conventional trench solutions are impossible for reasons of space. Due to the limited space in the unit, the interaction of the EC tangential fan and the high-output copper-aluminium fan coil has been optimised in the Katherm QK nano.
"I would like to heat electrically."	**QE**	The **Katherm QE** is the ideal solution when a coil with LPHW cannot be used. They stand out on account of their energy-saving and ultra-quiet EC tangential fans. The high-output electric heating coil delivers high heat outputs, while the sound level is very low.
"I would like to heat without a fan."	**NK**	The **Katherm NK** with natural convection works extremely energy-efficiently in low temperature mode. Its extensive range with 5 widths, 4 heights and 22 lengths guarantees maximum diversity of planning. Its quick installation with, among other things, Eurokonus valve connection, height adjustment feet and raised floor height adjustment feet, sets the Katherm NK apart.

BENEFITS	PERFORMANCE DATA / FEATURES		DIMENSIONS [mm]		
			I		I
› low-cost, effective heating and cooling with low noise levels › easy-clean in accordance with VDI 6022 › 2-pipe or 4-pipe system for individual comfort in every room	**Heat output** **Cooling output** **Convection** **Heating** **Cooling** **Ventilation** **Control**	› 544 – 16884 W [1] › 72 – 3348 W [2] | 90 – 4188 W [3] › EC tangential fan › LPHW › CHW › optional using supply air modules or supply air ducts › KaControl system or electromechanical control as standard › possible integration in KaControl networks or building automation systems, such as BACnet, CANbus, KNX, Modbus or LON	130 160 210	915 – 3000 950 – 3000 950 – 2250	320 290 360
› made-to-measure lengths › shallow unit depths combined with high outputs, even in low temperature operation › whisper-quiet EC technology	**Heat output** **Cooling output** **Convection** **Heating** **Cooling** **Ventilation** **Control**	› 437 – 6025 W [1] › --- › EC tangential fan › LPHW › --- › optionally using supply air modules › KaControl system or electromechanical control as standard › possible integration in KaControl networks or building automation systems, such as BACnet, CANbus, KNX, Modbus or LON	112	1000 – 3200	190 215
› extremely low overall height › maximum use of the available volume › usual quietness and high performance	**Heat output** **Cooling output** **Convection** **Heating** **Cooling** **Ventilation** **Control**	› 248 – 3524 W [1] › --- › EC tangential fan › LPHW › --- › --- › 24 V electromechanical, 230 V electro-mechanical or KaControl models › possible integration in KaControl networks or building automation systems, such as BACnet, CANbus, KNX, Modbus or LON	70	900 – 2700	165
› heating without water › fast warm-up yet silent operation › ideal alternative to convectors with LPHW	**Heat output** **Cooling output** **Convection** **Heating** **Cooling** **Ventilation** **Control**	› 160 – 2400 W [4] › --- › EC tangential fan › electric heating coil › --- › --- › simple, convenient electrical control 0 – 10 V via room temperature controller or BMS › control box with integral infinitely variable power control	112	825 – 1700	207
› compact, performance-optimised › extensive product range › shallow unit depths combined with high outputs › minimal installation work involved	**Heat output** **Cooling output** **Convection** **Heating** **Cooling** **Ventilation** **Control**	› 78 – 5590 W [1] › --- › natural › LPHW › --- › optionally using supply air modules › via room or clock thermostats	92 [1] 120 [1] 150 200	800 – 5000	137 182 232 300 380

Trench width
Trench length
Trench height

Heating
Cooling
Ventilation

[1] at LPHW 75/65 °C, t_{L1} = 20°C
[2] at CHW 16/18 °C, t_{L1} = 27 °C, 48 % rel. h.
[3] sensitive cooling output at CHW 6/12 °C, t_{L1} = 24 °C, 50 % rel. h.
[4] electrical heat output with control voltage BMS 2 – 10 V

WHICH TRENCH SYSTEM DO I NEED?

REQUIREMENT	KATHERM	DESCRIPTION
"I would like to feed in primary air by induction."	**ID**	The **Katherm ID** for heating and cooling by the principle of induction is an ideal, low-maintenance solution for feeding supply air into a space in an energy-saving manner without a fan and cooling it down with dry cooling temperature. The principle of induction works with prepared primary air with positive and negative pressure to draw in room air and drag it through the heat exchanger.
"I would like to heat with displacement ventilation."	**QL**	The **Katherm QL** is intended for energy-saving ventilation in which considerably less outside air needs to be conditioned to fully ventilate the room, by what is known as the principle of displacement ventilation. The heat load required can also be dissipated through the Katherm QL.
"I would like to ventilate in a space-saving manner without a centralised air handling unit."	**UZA**	Used in raised floors, the **UZA** provides for heating, cooling and ventilation (supply air, exhaust air) functions with heat recovery. This is a decentralised façade ventilation unit, which feeds outside air in directly through the façade.
"I have a central exhaust air system would like to feed in supply air decentrally."	**UZS**	The **UZS** is also a decentralised façade ventilation unit, which feeds outside air in through the façade. Apart from heating, cooling and ventilation unit functions, the UZS also offers the option of mixing secondary air to increase the output.
"I would like to heat, cool and ventilate with only a single unit."	**UZAS**	The **UZAS** combines the benefits of the UZA and UZS. Apart from heat recovery, the UZAS also enables secondary air to be mixed in to increase the output. When used in a raised floor, it provides for heating, cooling and ventilation functions, feeding in outside air directly through the façade.

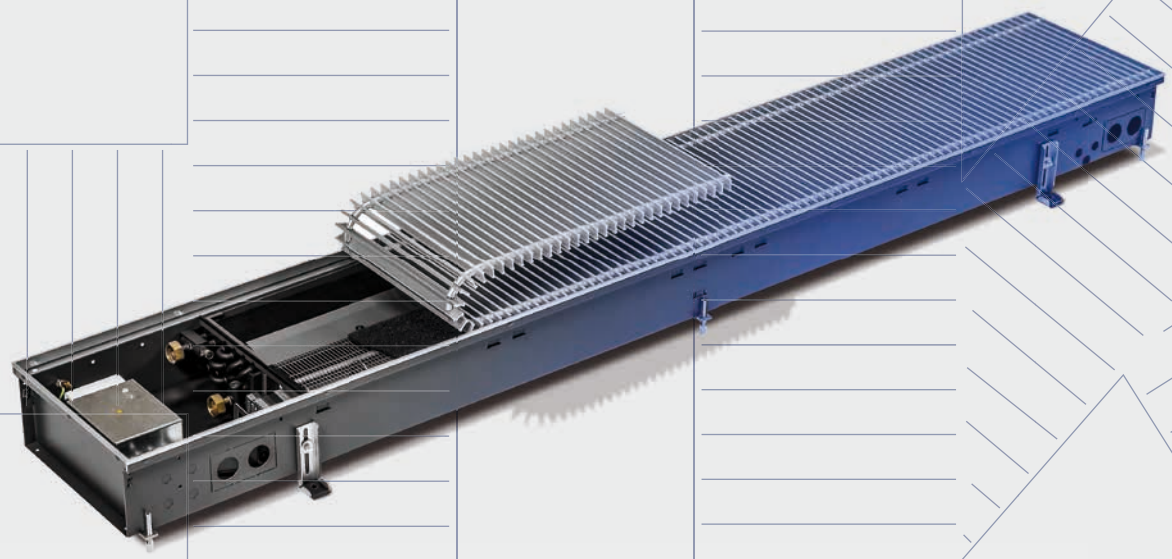
BENEFITS	PERFORMANCE DATA / FEATURES		DIMENSIONS [mm]		
			Trench height	Trench length	Trench width
› low-maintenance and hygienic heating and cooling with conditioned supply air, with optionally adapted water-based heat exchanger › fits numerous supply air volumes	**Heat output** **Cooling output** **Convection** **Heating** **Cooling** **Ventilation** **Control**	› 633 – 5487 W [1] › 85 – 824 W [2] › induction principle › LPHW › CHW › supply air is continuously fed into the room › ---	180 205	800 – 1600	340
› heating and ventilation on the principle of displacement ventilation with conditioned supply air in the room › comfortably used optimised displacement air, even for heating › with patented technology using cam shafts	**Heat output** **Cooling output** **Convection** **Heating** **Cooling** **Ventilation** **Control**	› 78 – 1367 W [1] › --- › natural › LPHW › --- › supply air is continuously fed into the room › via room or clock thermostats	150 180	700 – 2700	300 350
› for heating, cooling and ventilation with supply air (SUP) and exhaust air (ETA) with forced ventilation › with heat recovery › inspection and maintenance-friendly thanks to easily removable grille cover (modular design)	**Max. outside air volume** **Heat output** **Cooling output** **Convection** **Heating** **Cooling** **Ventilation** **Control**	› 120 m³/h › 1270 W [5] › 270 W [6] › --- › --- › --- › --- › with MFR in the occupied zone; connection to the BMS with all popular BUS systems via an MFR gateway	230 (172 underfloor)	1250	600 (345 visible)
› for heating, cooling and ventilation with supply air (SUP) and secondary air (SEC) with forced ventilation › with 2-pipe or 4-pipe coil › high calorific output by the addition of secondary air	**Max. outside air volume** **Heat output** **Cooling output** **Convection** **Heating** **Cooling** **Ventilation** **Control**	› 120 m³/h › 904 W [1] › 530 W [2] › --- › --- › --- › --- › control with with MFR in the occupied zone; connection to the BMS with all popular BUS systems via an MFR gateway	200 (143 underfloor)	1150	603 (345 visible)
› for heating, cooling and ventilation with supply air (SUP), exhaust air (ETA) and secondary air (SEC) with forced ventilation › with heat recovery › comfortable room climate as air is fed in close to the façade	**Max. outside air volume** **Heat output** **Cooling output** **Convection** **Heating** **Cooling** **Ventilation** **Control**	› 120 m³/h › 1550 W [3] › 490 W [4] › --- › --- › --- › --- › with MFR in the occupied zone; connection to the BMS with all popular BUS systems via an MFR gateway	214 (172 underfloor)	1000	824 (345 visible)

Trench width
Trench length
Trench height

Heating
Cooling
Ventilation

[1] at LPHW 75 / 65 °C, tL1 = 20 °C
[2] at CHW 16 / 18 °C, tL1 = 26 °C, 48 % rel. humidity
[3] Usable output 75/65/20/-12 °C VL/RL/RT/AL
[4] Usable output 16/18/26/32 °C VL/RL/RT/AL

KATHERM **HK**

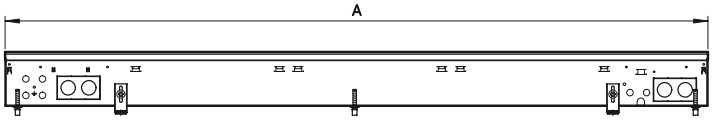


Trench units for heating and cooling.
EC cross-flow fan convection, whisper-quiet and energy-efficient.

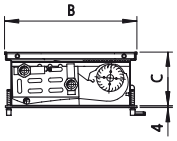
Technical data

Trench width	Trench height	Trench length	Heat output [1]		Cooling output, dry [2]		Sound pressure level [3] [4]	Sound power level [4]
B	C	A	2-pipe	4-pipe	2-pipe	4-pipe		
[mm]	[mm]	[mm]	[W]	[W]	[W]	[W]	[dB(A)]	[dB(A)]
320	130	915	706 – 2101	544 – 1220	87 – 356	85 – 337	<20 – 39	<28 – 47
		1200	1102 – 3627	954 – 2185	160 – 630	161 – 620	<20 – 41	<28 – 49
		1700	2149 – 6043	1766 – 3785	279 – 1043	280 – 1027	<20 – 41	<28 – 49
		2000	2321 – 7573	2110 – 4884	312 – 1326	314 – 1307	<20 – 44	<28 – 52
		2500	3336 – 10103	2822 – 6415	432 – 1749	433 – 1722	<20 – 44	<28 – 52
		3000	4266 – 12553	3611 – 8004	551 – 2159	552 – 2124	<20 – 44	<28 – 52
290	160	950	673 – 2811	564 – 1586	75 – 534	72 – 495	<20 – 39	<28 – 47
		1200	1137 – 4752	954 – 2681	127 – 903	121 – 837	<20 – 42	<28 – 50
		1700	1810 – 7562	1518 – 4268	202 – 1437	193 – 1332	<20 – 44	<28 – 52
		2000	2370 – 9905	1988 – 5590	265 – 1882	253 – 1744	<20 – 45	<28 – 53
		2500	3027 – 12648	2539 – 7138	338 – 2404	323 – 2228	<20 – 46	<28 – 54
		3000	4036 – 16865	3385 – 9517	451 – 3205	431 – 2970	<20 – 47	<28 – 55
360	210	950	887 – 4113	643 – 2982	92 – 816	87 – 768	<20 – 51	<28 – 59
		1200	1471 – 6819	1066 – 4944	152 – 1352	144 – 1273	<20 – 52	<28 – 60
		1350	1821 – 8442	1320 – 6121	189 – 1674	178 – 1576	<20 – 52	<28 – 60
		1850	2755 – 12771	1998 – 9261	286 – 2533	269 – 2385	<20 – 53	<28 – 61
		2250	3642 – 16884	2641 – 12243	378 – 3348	356 – 3153	<20 – 55	<28 – 63

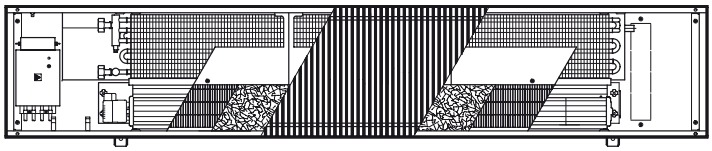
Dimensions



Front view



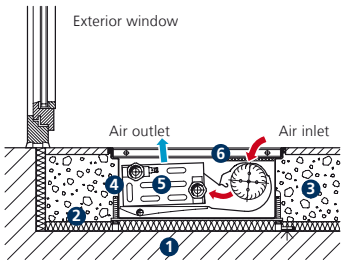
Cross-sectional view



Top view (view without cover panels)

Installation example of HK 320

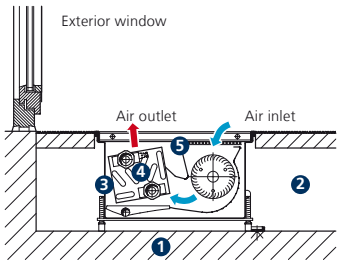
Installed in screed



1 Concrete slab
2 Heat and sound insulation
3 Screed
4 Floor trench
5 High-output convector
6 Filter (optional)

Installation example of HK 290

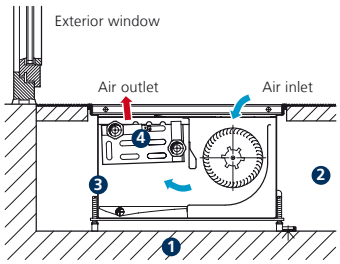
Installation in a raised floor



1 Concrete slab
2 Raised floor
3 Floor trench
4 High-output convector
5 Filter (optional)

Installation example of HK 360

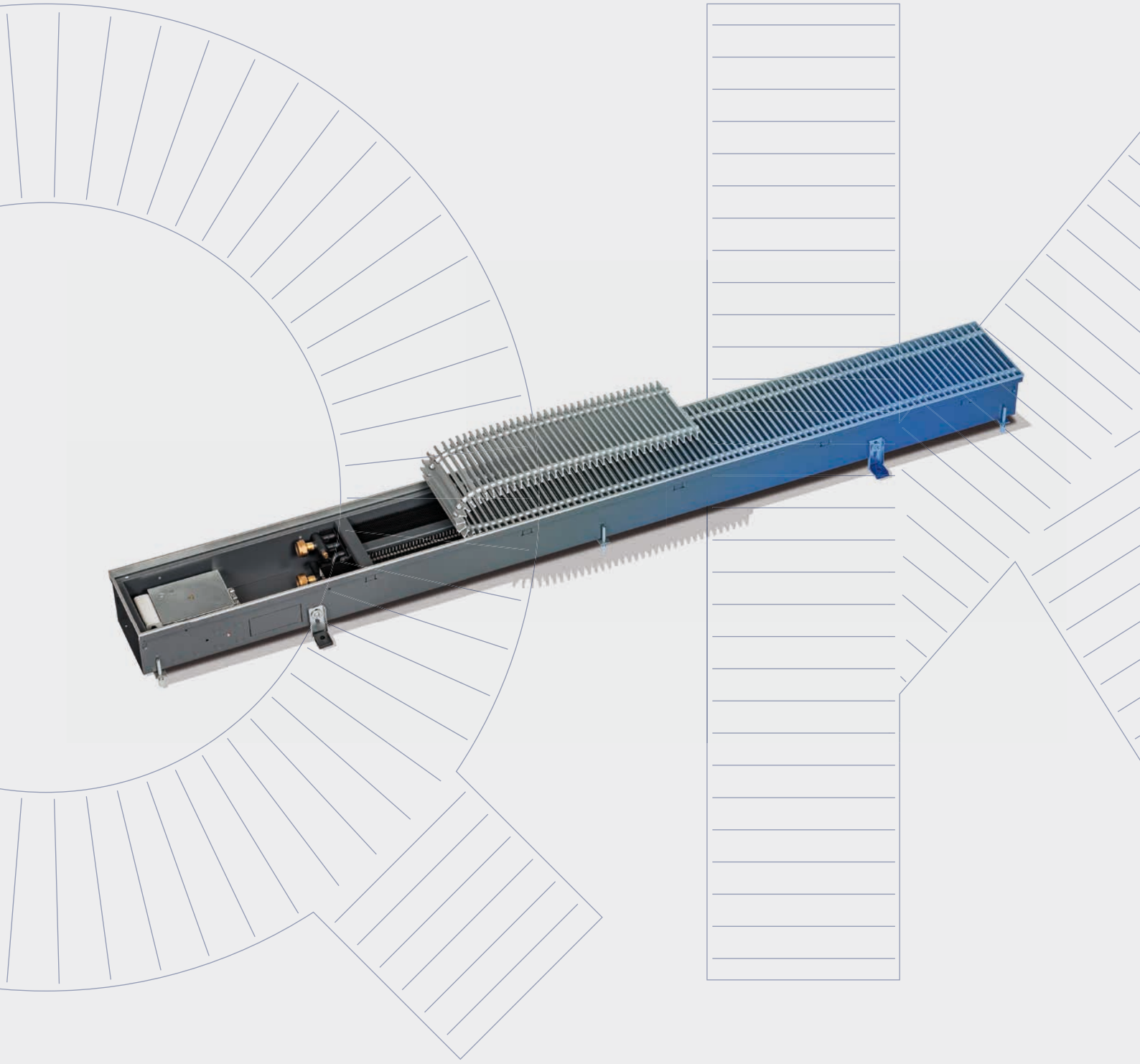
Installation in a raised floor



1 Concrete slab
2 Raised floor
3 Floor trench
4 High-output convector

[1] Heat output at LPHW 75 / 65 °C, room temperature 20°C, with fan-assisted convection
[2] Cooling output at CHW 16 / 18, room temperature 27 °C, 48% relative humidity, with fan-assisted convection
[3] The sound pressure levels were calculated with an assumed room insulation of 8 dB(A).
This corresponds to a distance of 2 m, a room volume of 100 m³ and a reverberation time of 0.5 s (in accordance with VDI 2081).
[4] Sound pressure level <20 dB(A) and sound power level <28 dB(A) outside the usual measuring and audible range.

KATHERM **QK**

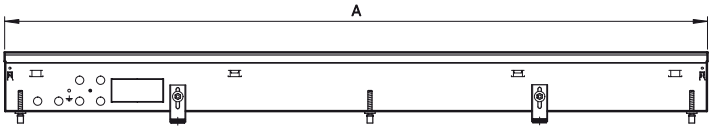


Trench units with EC cross-flow fan convection.
For low-temperature heating.

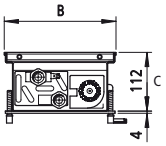
Technical data

Model	Heat output [1]				Sound pressure level [2] [3]	Sound power level [3]
	at LPHW 75 / 65 °C	at LPHW 55 / 45 °C	at LPHW 45 / 35 °C	at LPHW 35 / 30 °C		
	[W]	[W]	[W]	[W]	[dB(A)]	[dB(A)]
Katherm QK 190	437 – 5781	257 – 3413	169 – 2246	104 – 1383	<20 – 41	<28 – 49
Katherm QK 215	522 – 6025	315 – 3481	211 – 2252	133 – 1359	<20 – 41	<28 – 49

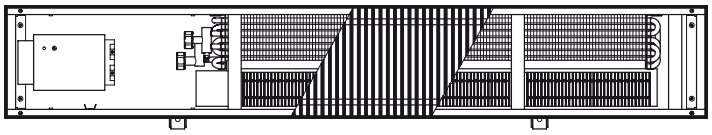
Dimensions



Front view



Cross-sectional view

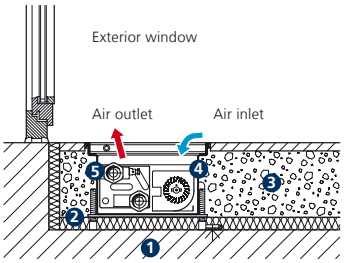


Top view (view without cover panels)

Katherm	Trench width B	Trench height C	Trench length A
	[mm]	[mm]	[mm]
QK 190	190	112	1000 – 3200
QK 215	215		

Katherm QK 190

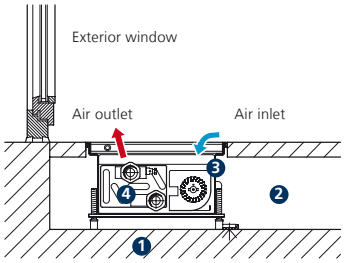
Installation in screed, H = 112 mm, W = 190 mm



1 Concrete slab
2 Heat and sound insulation
3 Screed
4 Floor trench
5 High-output convector

Katherm QK 215

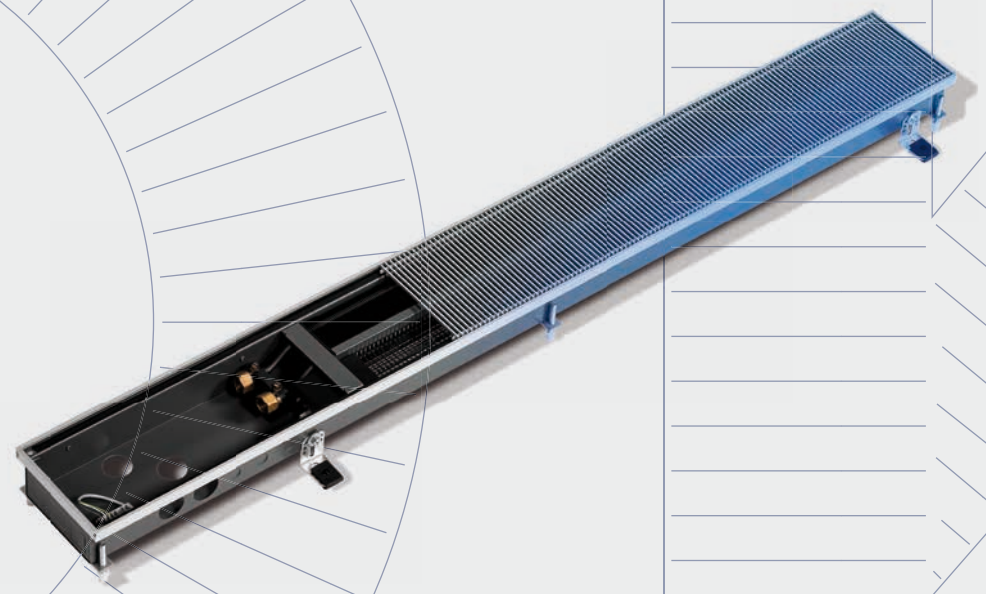
Installation in a raised floor, H = 112 mm, W = 215 mm



1 Concrete slab
2 Raised floor
3 Floor trench
4 High-output convector

[1] at room temperature 20 °C, with grille bar spacing 12 mm, free cross-section approx. 70%, with fan-assisted convection
[2] The sound pressure levels were calculated with an assumed room insulation of 8 dB(A).
This corresponds to a distance of 2 m, a room volume of 100 m³ and a reverberation time of 0.5 s (in accordance with VDI 2081).
[3] Sound pressure level <20 dB(A) and sound power level <28 dB(A) outside the usual measuring and audible range.

KATHERM **QK NANO**

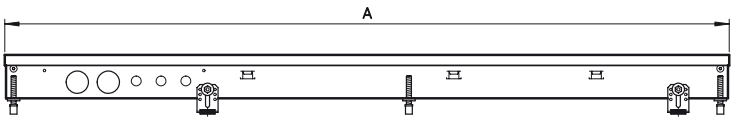


Trench units with EC cross-flow fan convection.
Nano format – top performance.

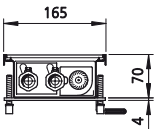
Technical data

Trench length		Heat output [1]					Sound pressure level [2] [3]	Sound power level [3]
Electromechanical model 24 V	230 V electromechanical model or KaControl	at LPHW 75 / 65 °C	at LPHW 55 / 45 °C	with LPHW 90/70 °C	with LPHW 82/71 °C	with LPHW 40/30 °C		
[mm]	[mm]	[W]	[W]	[W]	[W]	[W]	[dB(A)]	[dB(A)]
900	1100	248 – 772	120 – 461	321 – 928	295 – 874	45 – 229	<20 – 34	<28 – 42
1400	1600	496 – 1545	241 – 922	642 – 1857	590 – 1748	90 – 458	<20 – 37	<28 – 45
1800	2000	744 – 2317	361 – 1384	963 – 2785	885 – 2621	135 – 687	<20 – 39	<28 – 47
2100	2300	935 – 2912	454 – 1739	1211 – 3500	1112 – 3294	170 – 864	<20 – 40	<28 – 48
2600	2700	1132 – 3524	549 – 2105	1465 – 4236	1346 – 3987	206 – 1046	<20 – 41	<28 – 49

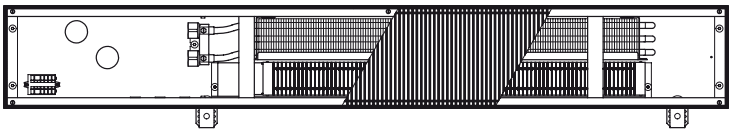
Dimensions



Front view



Cross-sectional view

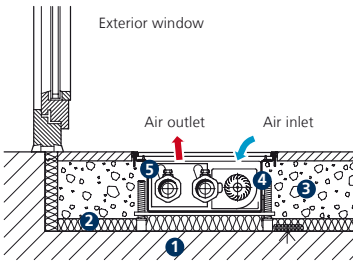


Top view (view without cover panels)

Trench length A	Finned convector length
[mm]	[mm]
900	435
1400	870
1800	1305
2100	1640
2600	1985

Installation example showing Katherm QK nano

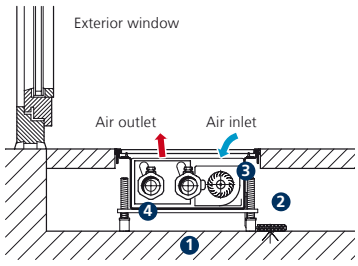
Installation in screed, H = 70 mm, W = 165 mm



1 Concrete slab
2 Heat and sound insulation
3 Screed
4 EC tangential fan
5 High-output convector

Installation example showing Katherm QK nano

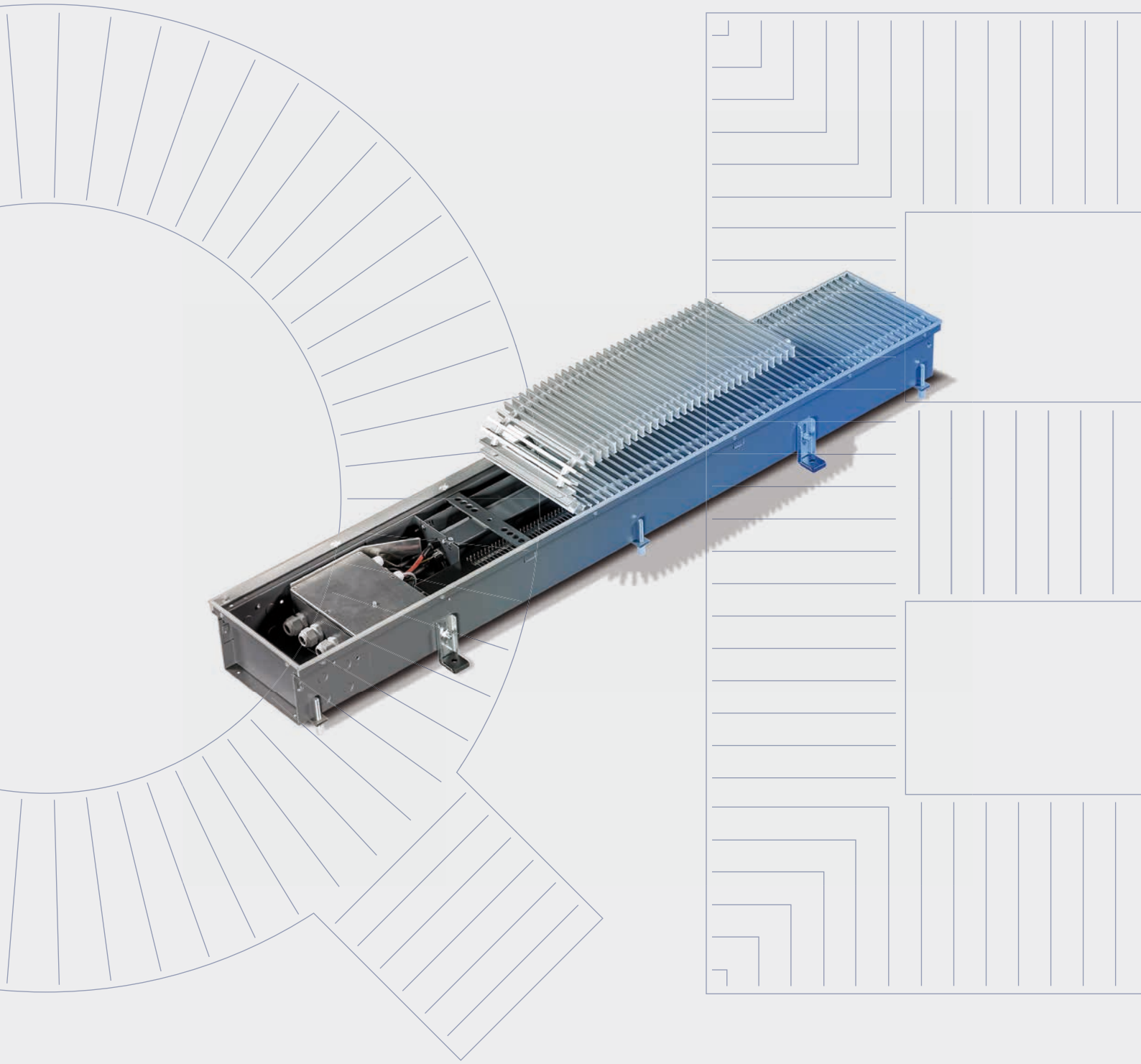
Installation in a raised floor, H = 70 mm, W = 165 mm



1 Concrete slab
2 Raised floor
3 EC tangential fan
4 High-output convector

[1] at room temperature 20 °C, with fan-assisted convection
[2] The sound pressure levels were calculated with an assumed room insulation of 8 dB(A).
This corresponds to a distance of 2 m, a room volume of 100 m³ and a reverberation time of 0.5 s (in accordance with VDI 2081).
[3] Sound pressure level <20 dB(A) and sound power level <28 dB(A) outside the usual measuring and audible range.

KATHERM **QE**

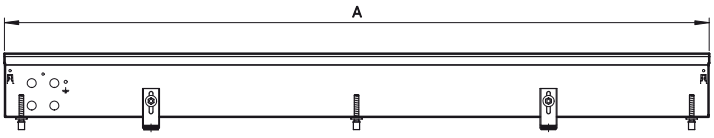


EC tangential fan-assisted convection
with electric heating element.

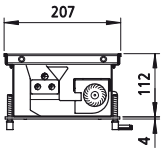
Technical data

Trench width	Trench height	Heating element height/depth	Trench length A	Finned coil length	Max. heat output	Max. sound pressure level [1) 2)]	Max. sound power level [2)]
[mm]	[mm]	[mm]	[mm]	[mm]	[W]	[dB(A)]	[dB(A)]
207	112	25 x 50	825	400	800	28	36
			1250	835	1600	31	39
			1700	1270	2400	33	41

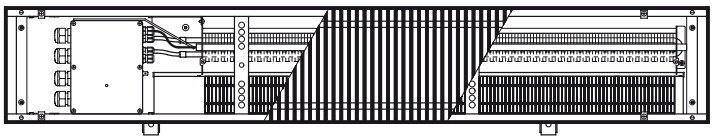
Dimensions



Front view



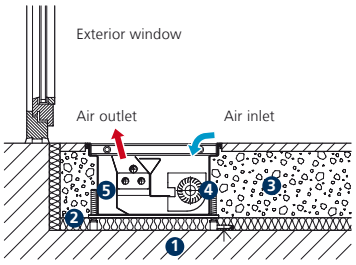
Cross-sectional view



Top view (view without cover panels)

Installation example of Katherm QE

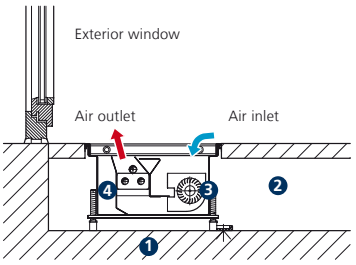
Installation in screed, H = 112 mm, W = 207 mm



1 Concrete slab
2 Heat and sound insulation
3 Screed
4 EC tangential fan
5 Electric heating coil

Installation example of Katherm QE

Installation in a raised floor, H = 112 mm, W = 207 mm



1 Concrete slab
2 Raised floor
3 EC tangential fan
4 Electric heating coil

[1)] The sound pressure levels were calculated with an assumed room insulation of 8 dB(A).
This corresponds to a distance of 2 m, a room volume of 100 m³ and a reverberation time of 0.5 s (in accordance with VDI 2081).
[2)] Sound pressure level <20 dB(A) and sound power level <28 dB(A) outside the usual measuring and audible range.

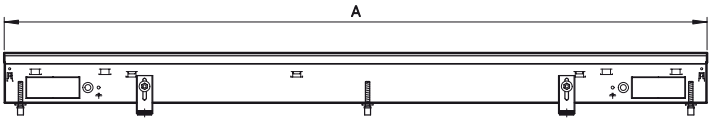
KATHERM **NK**

Trench system with natural convection,
no moving parts.

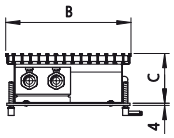
Technical data

Katherm NK model	Trench length A	Trench width B	Trench height C	Heat outputs [1]			
				LPHW 75 / 65 °C	LPHW 55 / 45 °C	LPHW 50 / 40 °C	LPHW 45 / 35 °C
	[mm]	[mm]	[W]	[W]	[W]	[W]	[W]
NK 137	800 – 5000	137	92	78 – 981	34 – 431	26 – 322	18 – 224
			120	84 – 1050	35 – 438	26 – 321	18 – 219
NK 182		182	92	132 – 1295	66 – 646	51 – 504	38 – 372
			120	162 – 1594	80 – 784	62 – 608	45 – 446
			150	206 – 1857	96 – 867	73 – 661	53 – 474
			200	232 – 2084	106 – 954	80 – 722	57 – 513
NK 232		232	92	157 – 1530	76 – 741	59 – 572	43 – 417
			120	193 – 1881	93 – 911	72 – 703	53 – 512
			150	309 – 2778	146 – 1381	112 – 1010	81 – 729
			200	334 – 3010	160 – 1442	123 – 1109	89 – 804
NK 300		300	92	209 – 2036	104 – 1011	81 – 788	60 – 580
			120	268 – 2609	133 – 1296	104 – 1010	76 – 744
			150	394 – 3545	189 – 1699	145 – 1306	105 – 947
			200	445 – 4003	211 – 1899	162 – 1455	117 – 1050
NK 380		380	92	279 – 2717	142 – 1384	112 – 1088	83 – 810
			120	344 – 3353	173 – 1691	136 – 1325	101 – 982
			150	485 – 4362	235 – 2112	181 – 1630	132 – 1188
			200	621 – 5590	299 – 2693	231 – 2075	168 – 1508

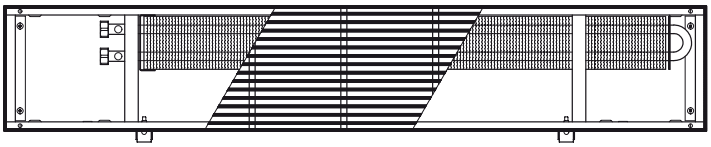
Dimensions



Front view



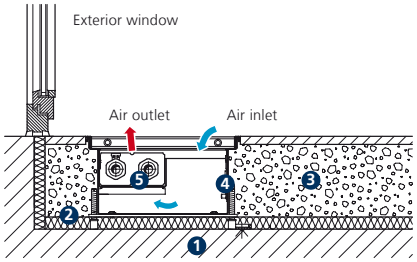
Cross-sectional view



Top view (view without cover panels)

Katherm NK 232

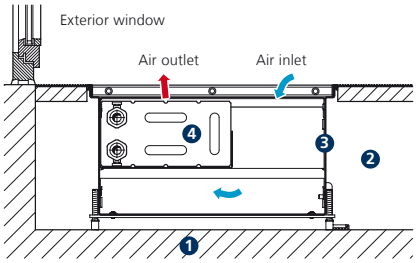
Installed in screed



1 Concrete slab
2 Heat and sound insulation
3 Screed
4 Floor trench
5 High-output convector

Katherm NK 380

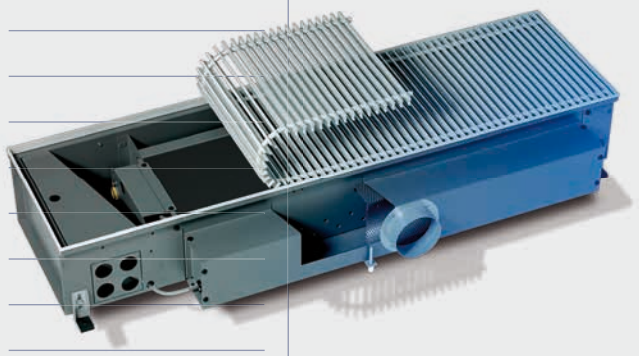
Installation in a raised floor



1 Concrete slab
2 Raised floor
3 Floor trench
4 High-output convector

[1] Heat outputs at room temperature 20 °C

KATHERM **ID**

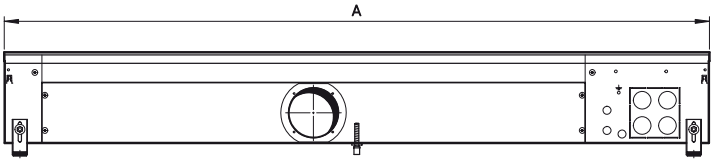


Trench units for heating and cooling
by the principle of induction without rotating
parts with conditioned air.

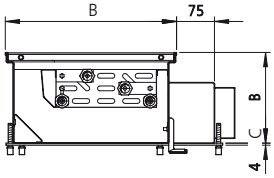
Technical data

Trench width	Trench height	Trench length	Heat output [1]		Cooling output [2]		Sound pressure level [3]	Sound power level [4]
B	C	A	2-pipe	4-pipe	2-pipe	4-pipe		
[mm]	[mm]	[mm]	[W]	[W]	[W]	[W]	[dB(A)]	[dB(A)]
340	180	800	990 – 1975	816 – 1323	125 - 332	125 - 332	<20 – 33	<28 – 41
		1000	1329 – 2711	1114 – 1834	165 - 453	165 - 453	<20 – 34	<28 – 42
		1200	1726 – 3534	1445 – 2385	215 - 591	215 - 591	<20 – 36	<28 – 44
		1400	2242 – 4357	1845 – 2937	283 - 730	283 - 730	<20 – 37	<28 – 45
		1600	2640 – 5180	2177 – 3488	333 - 868	333 - 868	<20 – 37	<28 – 45
	205	800	1069 – 2181	816 – 1323	142 - 383	142 - 383	<20 – 33	<28 – 41
		1000	1433 – 2991	1114 – 1834	188 - 522	188 - 522	<20 – 34	<28 – 42
		1200	1862 – 3900	1445 – 2385	244 - 681	244 - 681	<20 – 36	<28 – 44
		1400	2422 – 4808	1845 – 2937	323 - 841	323 - 841	<20 – 37	<28 – 45
		1600	2851 – 5717	2177 – 3488	379 - 1001	379 - 1001	<20 – 37	<28 – 45

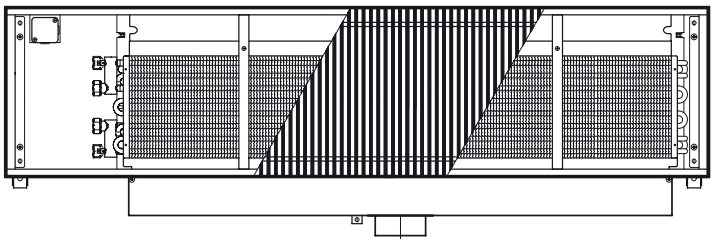
Dimensions



Front view



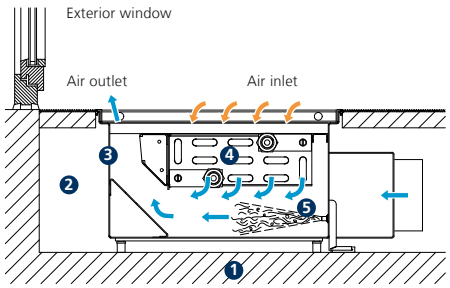
Cross-sectional view



Top view (without cover panel)

Installation example of ID 340

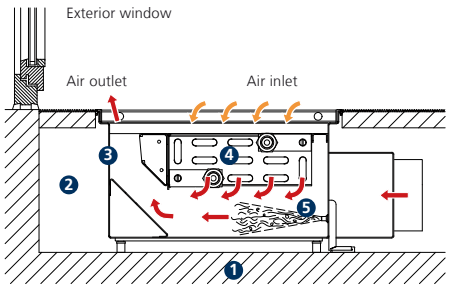
Installation in a raised floor, cooling



1 Concrete slab
2 Raised floor
3 Floor trench
4 High-output convector
5 Induction nozzle

Installation example of ID 340

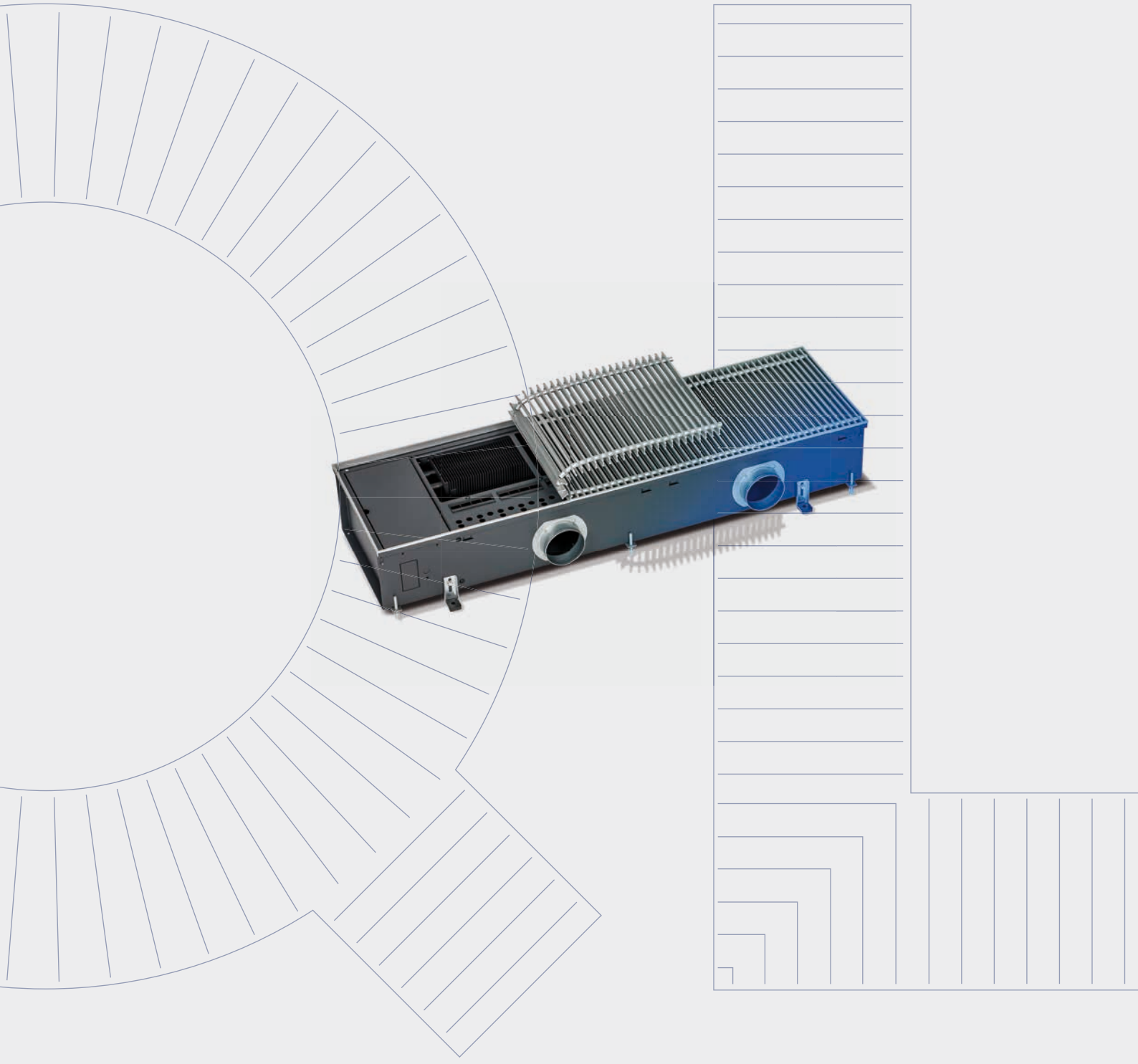
Installation in a raised floor, heating



1 Concrete slab
2 Raised floor
3 Floor trench
4 High-output convector
5 Induction nozzle

[1] Heat output at LPHW 75 / 65 °C, room temperature 20°C
[2] Cooling output at CHW 16 / 18 °C, room temperature 26 °C, 48% relative humidity
[3] The sound pressure levels were calculated with an assumed room insulation of 8 dB(A).
This corresponds to a distance of 2 m, a room volume of 100 m³ and a reverberation time of 0.5 s (in accordance with VDI 2081).
[4] Sound pressure level <20 dB(A) and sound power level <28 dB(A) outside the usual measuring and audible range.

KATHERM **QL**

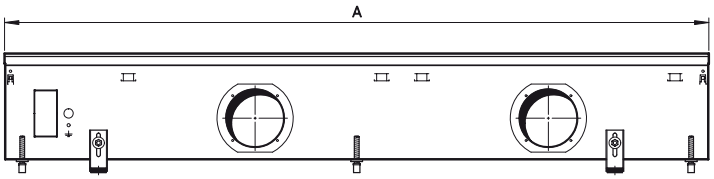


The displacement air system for draught-free
and energy-saving displacement ventilation.

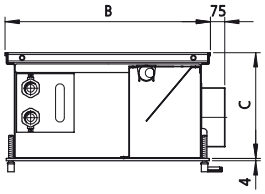
Technical data

Model Katherm QL	Primary air	Trench length A	Trench width B	Trench height C	Heat outputs [1] LPHW 75/65 °C	LPHW 55/45 °C	LPHW 50/40 °C	LPHW 45/35 °C
		[mm]	[mm]	[mm]	[W]	[W]	[W]	[W]
QL 300	none	700 1200 1700 2200 2700	300	150	133–796	63–379	49–291	35–211
				180	166–995	80–482	62–372	45–271
QL 350			350	150	156–937	74–446	57–343	41–248
				180	195–1171	94–567	73–438	53–319
QL 300	20–80m³/h per metre of trench at 2–4 K undertemperature		300	150	116–697	59–351	46–275	34–204
				180	156–935	76–458	59–355	43–260
QL 350			350	150	137–820	69–413	54–324	40–240
				180	183–1100	90–539	70–418	51–306

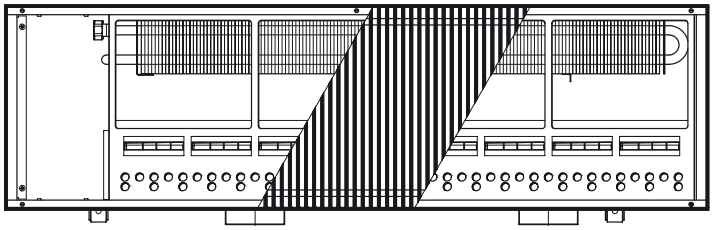
Dimensions



Front view



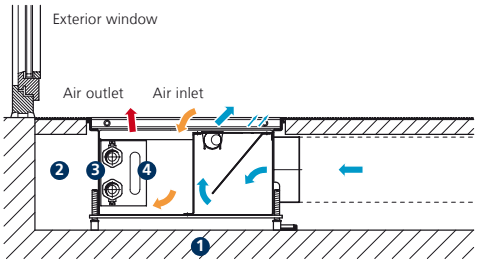
Cross-sectional view



Top view (without cover panel)

Installation example of QL 300

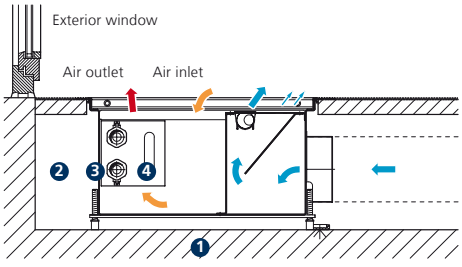
Installation in a raised floor



1 Concrete slab
2 Raised floor
3 Floor trench
4 High-output convector

Installation example of QL 350

Installation in a raised floor



1 Concrete slab
2 Raised floor
3 Floor trench
4 High-output convector

[1] Room temperature 20 °C

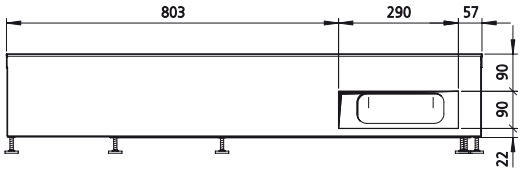
UZS

The façade ventilation unit
for heating, cooling and ventilation
with a secondary air function.

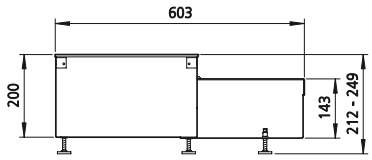
Technical data

Proportion of outside air	Proportion of secondary air	Heat output, total / usable output [1]		Cooling output, total / usable output [2]		Sound pressure level	Sound power level
		2-pipe	4-pipe	2-pipe	4-pipe		
[m³/h]	[m³/h]	[W]	[W]	[W]	[W]	[dB(A)]	[dB(A)]
30	0	653/372	643/361	249/106	219/94	21	29
	115	2070/1934	1244/1003	432/363	400/331	31	39
	218	3141/3135	1674/1484	638/564	580/508	48	56
60	0	1288/724	963/359	413/179	356/157	21	29
	105	2541/2081	1492/900	523/392	485/355	31	39
	208	3568/3224	1864/1306	717/583	652/519	48	56
90	0	1901/1051	1273/345	557/244	474/213	28	36
	93	2972/2194	1713/777	608/415	563/371	32	40
	199	3986/3311	2036/1116	795/599	722/529	48	56
120	0	2491/1353	1568/314	680/302	573/262	34	42
	68	3254/2153	1870/595	667/412	617/364	35	43
	188	4370/3365	2184/904	866/609	788/533	48	56

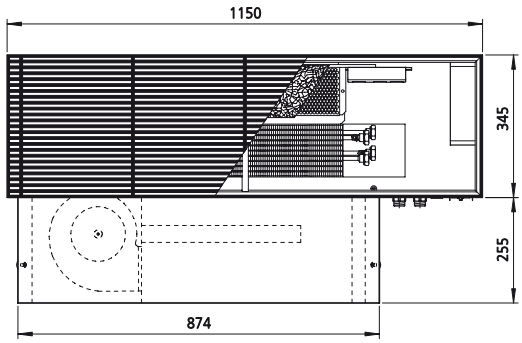
Dimensions



Front view (air inlet façade side)



Cross-sectional view

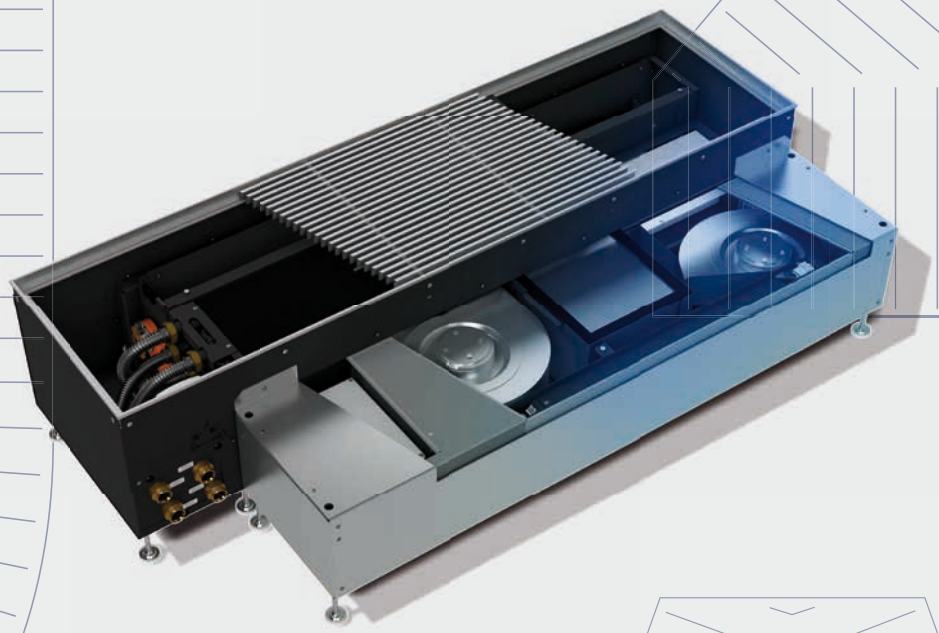


Plan view

[1] Cooling: Flow temperature tV °C 16, Return temperature tR °C 18 | Air inlet temperature, secondary air tSEC °C 26 | Relative air humidity, secondary air ϕSEC % 50 | Air inlet temperature, outside air tODA °C 32 | Relative air humidity, outside air ϕODA % 40

[2] Heating: Flow temperature tV °C 75 | Return temperature tR °C 65 | Air inlet temperature, secondary air tSEC °C 20 | Air humidity, secondary air ϕSEC % 50 | Air inlet temperature, outside air tODA °C -12 | Relative air humidity, outside air ϕODA % 50

UZA

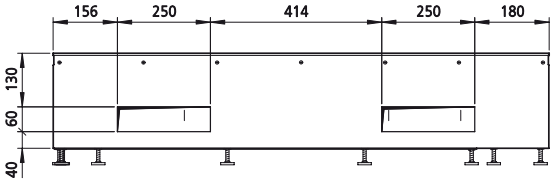


The façade ventilation unit with heat recovery with supply air and exhaust air function for heating, cooling and ventilation.

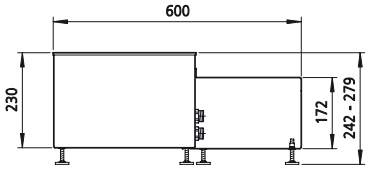
Technical data

Proportion of outside air	Heat output, total / usable output [1]		Cooling output, total / usable output [2]		Sound pressure level	Sound power level
	2-pipe	4-pipe	2-pipe	4-pipe		
[m³/h]	[W]	[W]	[W]	[W]	[dB(A)]	[dB(A)]
30	860/538	662/341	180/100	141/81	19	27
60	1723/1080	1313/669	322/186	270/149	22	30
90	2568/1604	1942/977	446/265	392/211	30	38
120	3397/2112	2557/1271	584/343	513/272	37	45

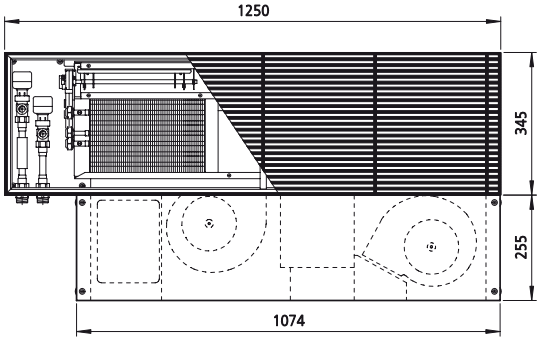
Dimensions



Front view (air inlet façade side)



Cross-sectional view

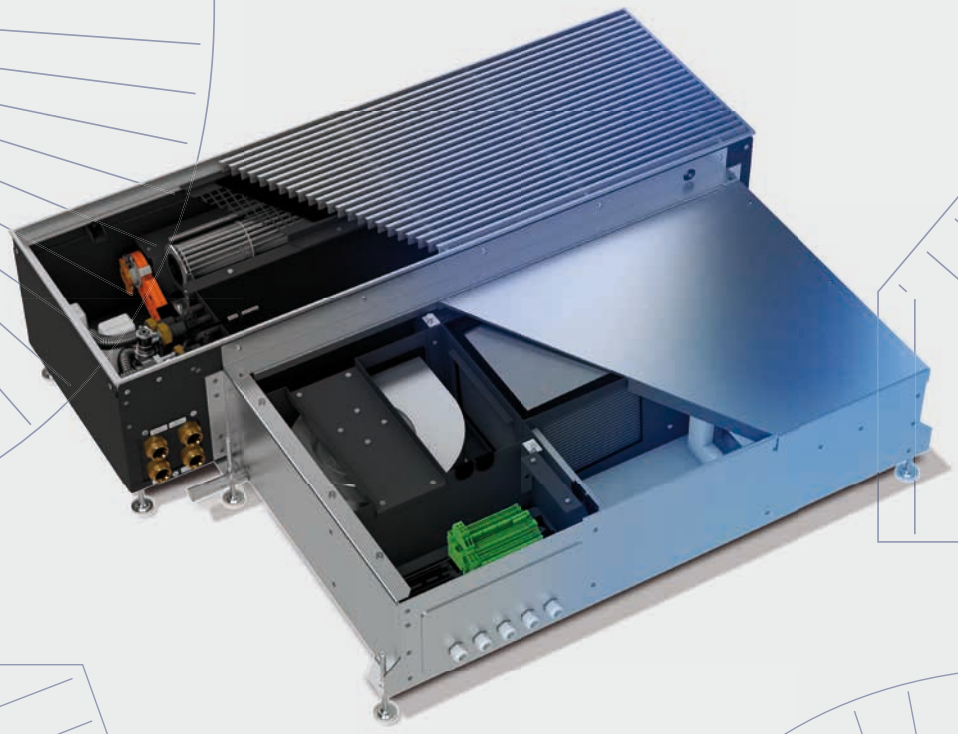


Plan view

[1] Cooling: Flow temperature tV °C 16, Return temperature tR °C 18 | Air inlet temperature, secondary air tSEC °C 26 | Relative air humidity, secondary air ϕSEC % 50 | Air inlet temperature, outside air tODA °C 32 | Relative air humidity, outside air ϕODA % 40

[2] Heating: Flow temperature tV °C 75 | Return temperature tR °C 65 | Air inlet temperature, secondary air tSEC °C 20 | Air humidity, secondary air ϕSEC % 50 | Air inlet temperature, outside air tODA °C -12 | Relative air humidity, outside air ϕODA % 50

UZAS

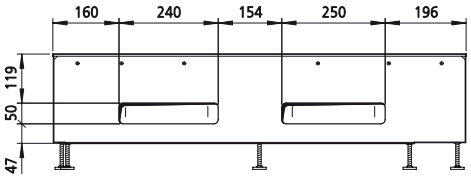


The façade ventilation unit with
heat recovery for heating, cooling and ventilation.

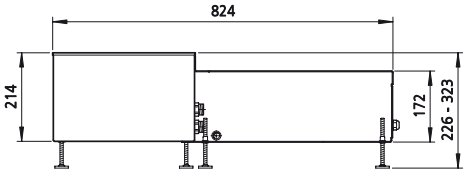
Technical data

Proportion of outside air	Proportion of secondary air	Heat output, total / usable output [1]		Cooling output, total / usable output [2]		Sound pressure level	Sound power level
		2-pipe	4-pipe	2-pipe	4-pipe		
[m³/h]	[m³/h]	[W]	[W]	[W]	[W]	[dB(A)]	[dB(A)]
30	32	1135/815	965/645	201/142	192/133	20	28
	104	1997/1677	1417/1097	358/299	340/281	26	34
	187	2898/2578	1851/1531	508/449	481/423	40	48
60	32	1818/1178	1443/803	324/207	310/192	23	31
	104	2646/2006	1863/1223	468/351	446/329	27	35
	187	3503/2863	2239/1599	604/487	574/457	40	48
90	32	2646/1504	1872/912	439/263	419/243	28	36
	104	3257/2297	2252/1292	570/395	544/368	30	38
	187	4068/3108	2564/1604	691/515	658/482	40	48
120	31	3068/1788	2264/1604	544/310	520/286	34	42
	99	3789/2509	2586/1306	657/424	627/393	35	43
	178	4525/3245	2829/1549	761/527	725/491	41	49

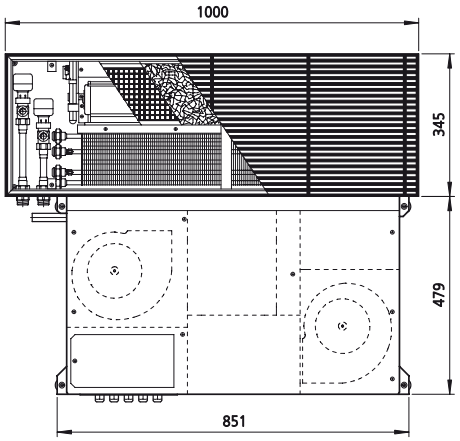
Dimensions



Front view (air inlet façade side)



Cross-sectional view



Plan view

[1] Cooling: Flow temperature tV °C 16, Return temperature tR °C 18 | Air inlet temperature, secondary air tSEC °C 26 | Relative air humidity, secondary air ϕSEC % 50 | Air inlet temperature, outside air tODA °C 32 | Relative air humidity, outside air ϕODA % 40

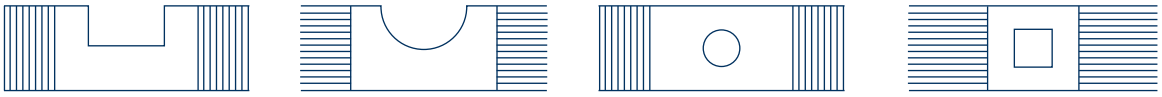
[2] Heating: Flow temperature tV °C 75 | Return temperature tR °C 65 | Air inlet temperature, secondary air tSEC °C 20 | Air humidity, secondary air ϕSEC % 50 | Air inlet temperature, outside air tODA °C -12 | Relative air humidity, outside air ϕODA % 50

RANGE OF MODELS
FOR GREATER FLEXIBILITY OF ROOM DESIGN

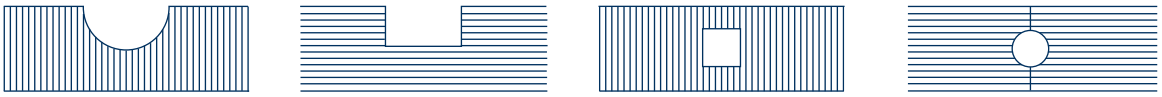
Swedbank AB,
Stockholm, Sweden

KATHERM TRENCH TECHNOLOGY
FLEXIBLY ADAPTABLE

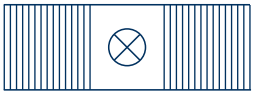
Adjustments and special designs are the norm in project work. Katherm trench units are therefore available for all geometries, incorporating mitred corners, curved sections, column cut-outs or angles.



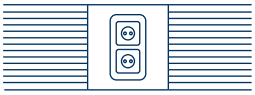
RECESSES WITH A COVER PLATE



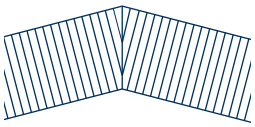
RECESSES IN THE GRILLE ITSELF



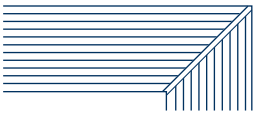
INTEGRATED LIGHTING



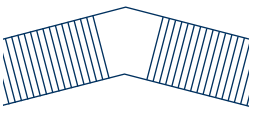
INTEGRATED SOCKET



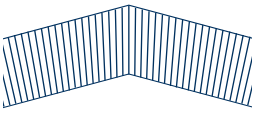
MITRE WITH PROFILE



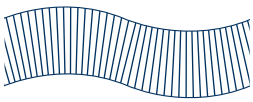
MITRED



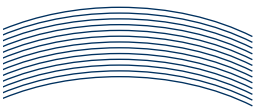
MITRE WITH COVER



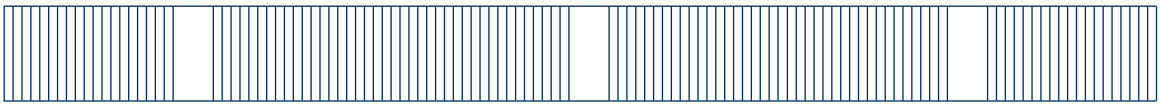
ALIGNMENT OF THE BAR POSITION



CURVING OF ROLL-UP GRILLE

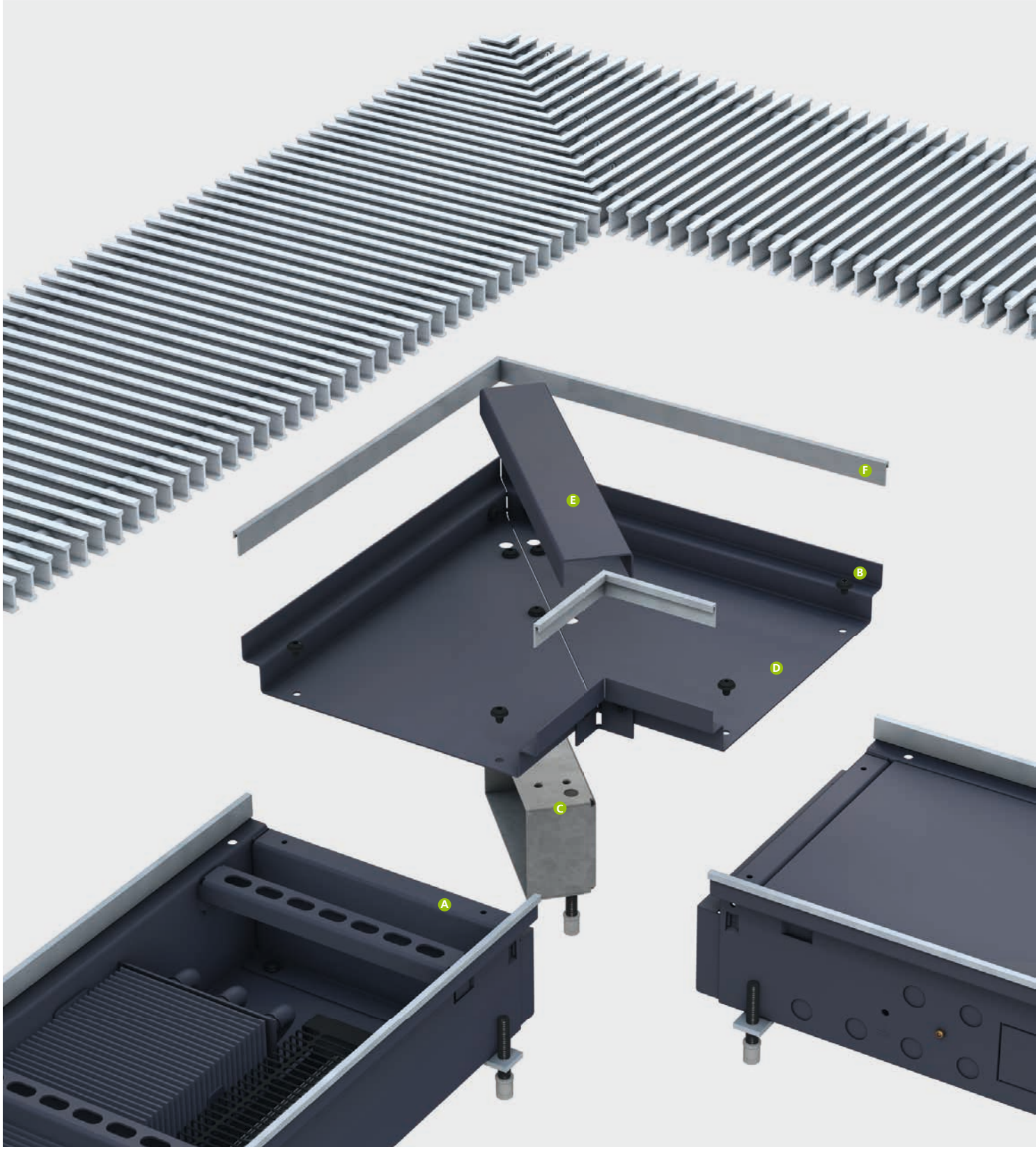


CURVING OF LINEAR GRILLE



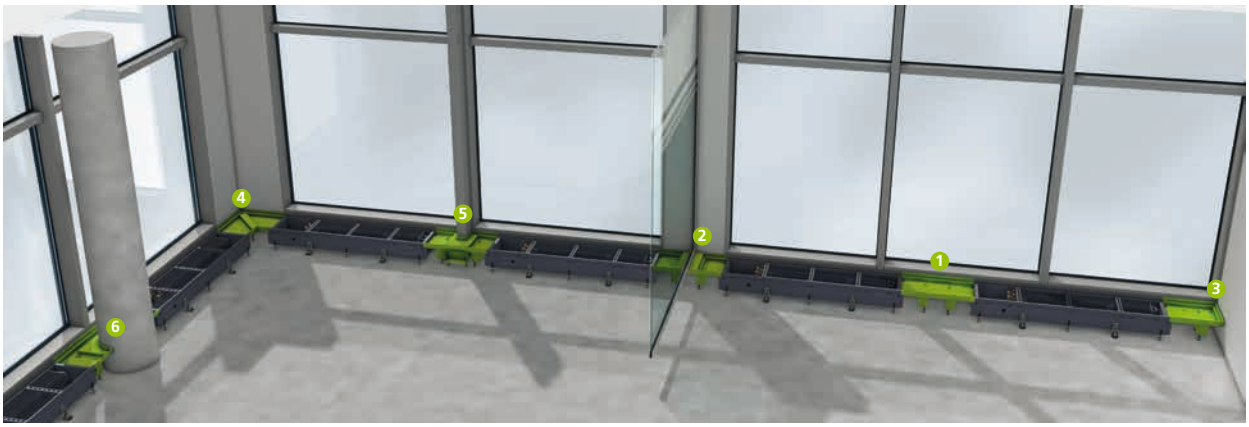
MIDDLE COVER IN THE BUILDING GRID

A Modular brackets combine Katherm trench units with the Katherm connection modules
B Flat design, for instance for bridging cladding anchors
C Robust height adjustment for ease of adaptation
D Katherm modules can be cut to size on site
E Grille support
F Frame profile delivered separately



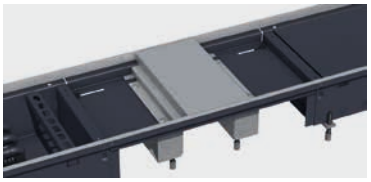
KATHERM TRENCH TECHNOLOGY
FLEXIBLY ADAPTABLE

Individual connecting modules between the Kampmann trench units create an aesthetic overall picture without disruptive interruptions. You're prepared for every architectural challenge with Kampmann.

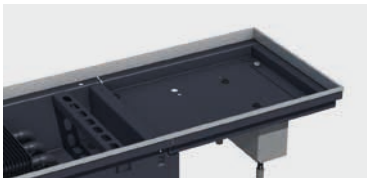


TECHNICAL DETAILS

1 CONNECTING MODULE
> available in different lengths
> can be shortened on site by up to 100 mm to fit the building structure



2 PARTITION SUPPORT
> can be used in combination with the connecting module
> in a range of different versions for all wall thicknesses
> position of partition support can be varied



3 END MODULE
> for on-site length adjustment with slide-in head section
> can be cut

4 CORNER MODULE
> connecting module with a 90° angle cannot be shortened

5 COLUMN MODULE, RECTANGULAR
> connecting module with recess support element with frame profile is delivered precisely to fit following site measurement
> ideal for all kinds of façade profiles

6 ROUND COLUMN MODULE
> connecting module with cut-out
> attachment element with round frame profile is delivered made-to-measure following site measurement

GRILLE COLOURS

Opt for aluminium grilles in a range of anodised finishes.
Or for different finishes of wooden grilles. Perhaps you might prefer polished stainless steel grilles?

WOOD

OAK
LACQUERED OR OILED

MERBAU
LACQUERED OR OILED

BEECH
LACQUERED OR OILED

MAPLE
LACQUERED OR OILED

OPTILINE

ALUMINIUM
COATED DB703

ALUMINIUM
BRONZE ANODISED

ALUMINIUM
BRONZE FINISH

ALUMINIUM
NATURAL ANODISED

ALUMINIUM
BRASS ANODISED

ALUMINIUM
BLACK ANODISED

STAINLESS STEEL
POLISHED

STAINLESS STEEL
NATURAL

BRASS
NATURAL

The grille colours illustrated here do not represent an exact reproduction of the original shades. Please contact us for sample grilles if required.

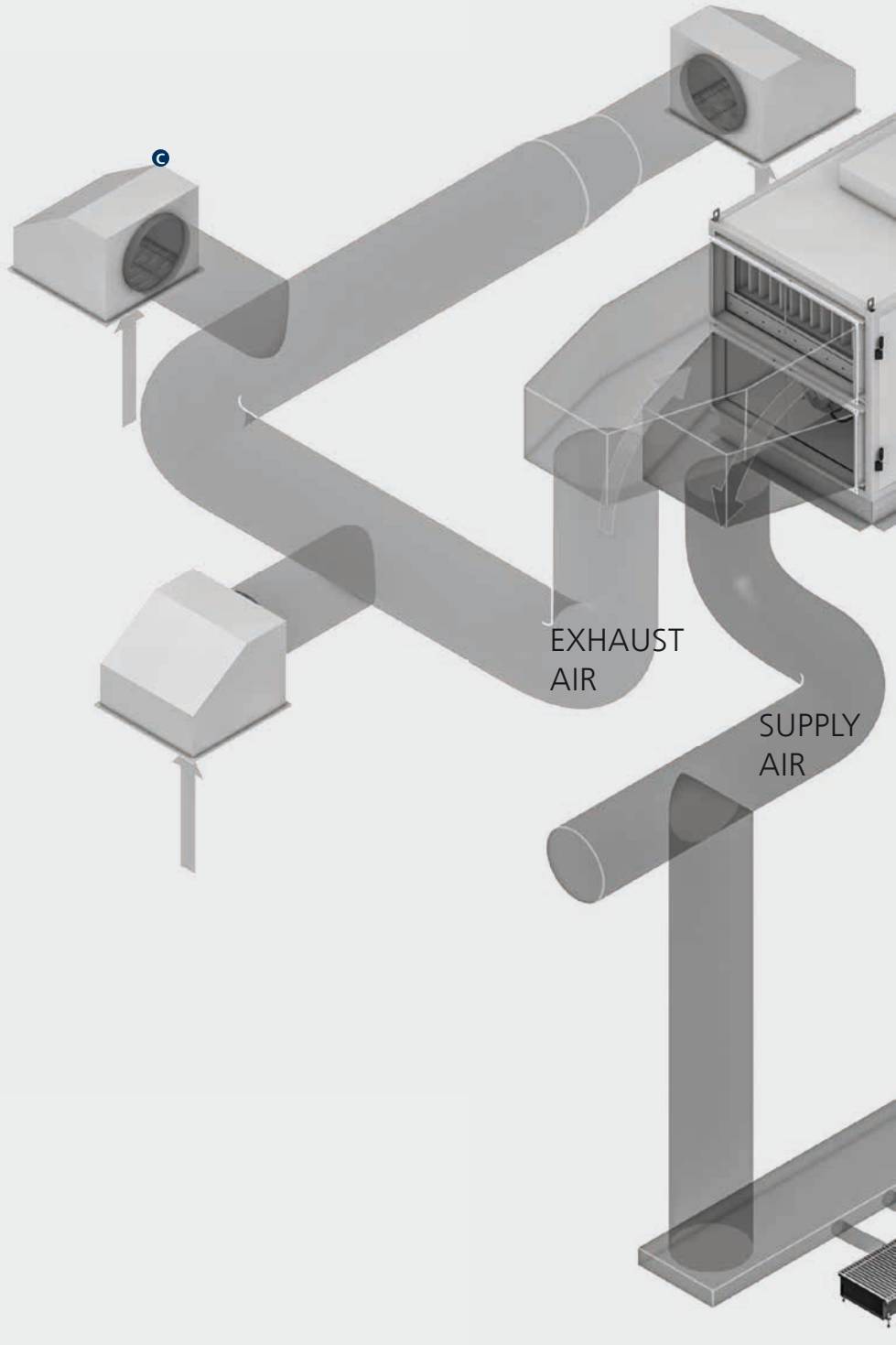
SUPPLY AIR VERSIONS FOR KATHERM TRENCH UNITS

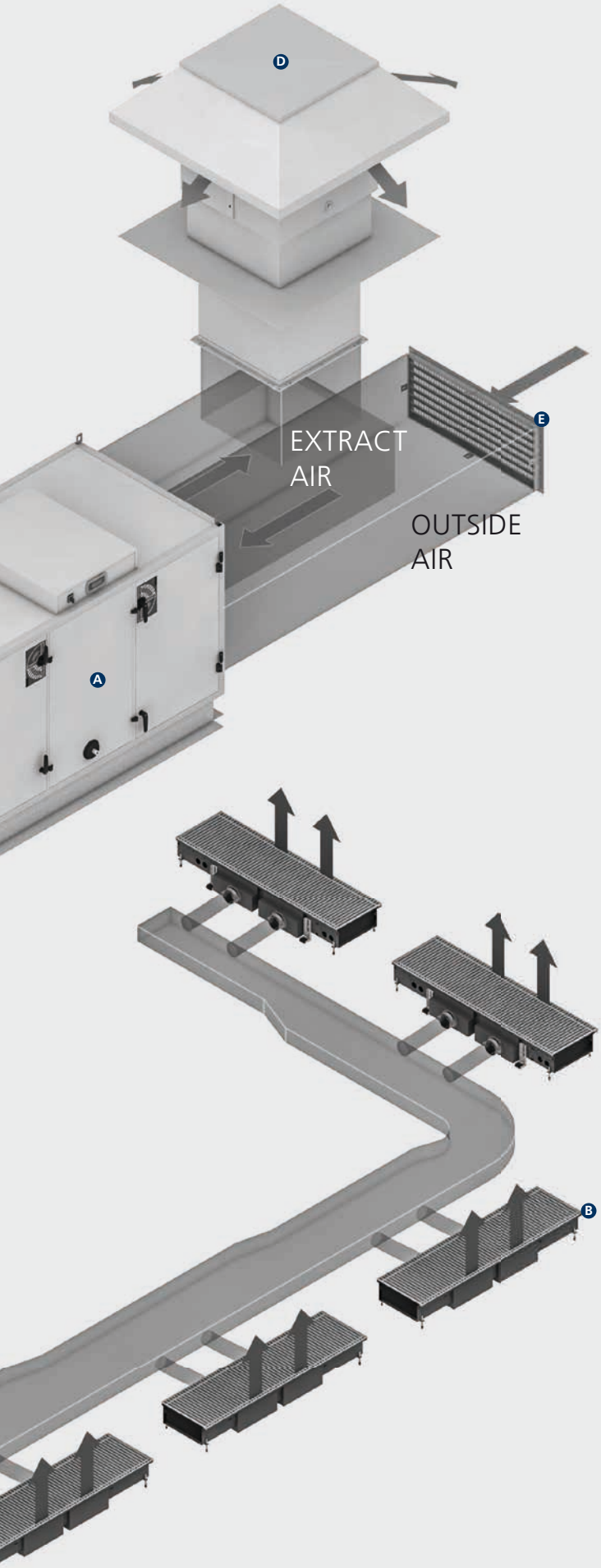
Prime Tower
Zurich, Switzerland

THE HYBRID ECO SYSTEM

Energy-efficient and environmentally-friendly building ventilation and air conditioning solution

Almost all Katherm trench units can be fitted with a supply air function for specific projects. Primary air, pre-conditioned by a central ventilation unit, can be introduced into a room through various supply air spigots, perfectly combining heating, cooling and a supply of fresh air. The space requirement is thus minimised and comfort in the building maximised.



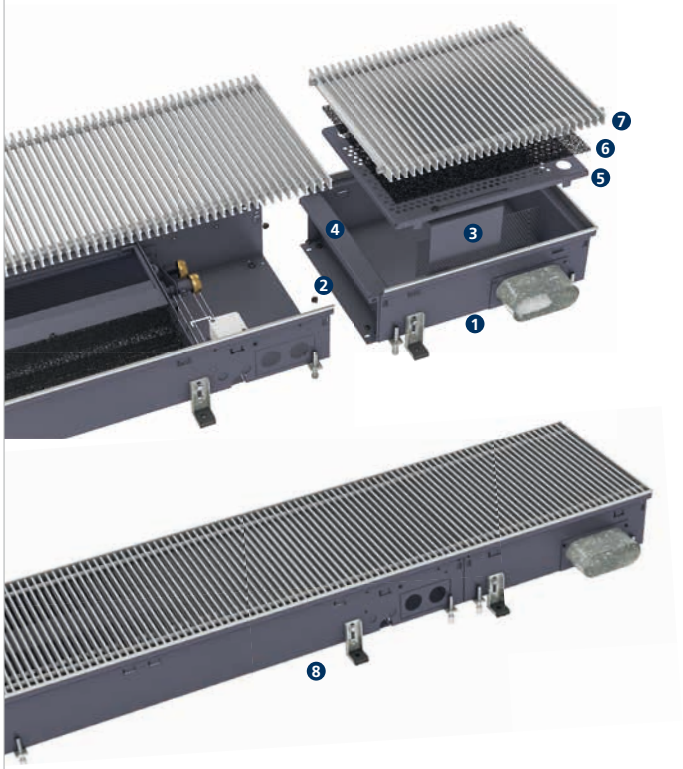


A Air handling unit
B Trench unit
C Exhaust air box
D Rain hood
E Weather protection grille

The Hybrid ECO system is a bidirectional ventilation system with efficient heat recovery. Although the temperature is adjusted on this system by decentralised equipment in the inside of the room and not via the central ventilation unit (air handling unit).

SUPPLY AIR VERSIONS

Fresh air fed in through trench units – for maximum space saving and comfort



1 Supply air duct with supply air spigots
2 Connecting brackets
3 Supply air slider
4 Reinforcing struts
5 Perforated plate
6 Filter
7 Example of Optiline roll-up grille
8 Kampmann HK shown with Optiline roll-up grille

Katherm HK with supply air channel (filter, optional accessories) is shown by way of example

The Katherm supply air trench is available for all trench convectors (Katherm range). This represents a 400 mm long trench, which can be fitted to all designs of Katherm units.

Treated supply air can also be fed into rooms through the Katherm supply air trench ZL. This is achieved using different spigot sizes and spigot designs to fit the various duct dimensions (refer to the technical catalogues for the individual Katherm trench units). It is possible to regulate the volumetric flow in situ by means of slider elements in the supply air modules.

BENEFITS:

> low leaving air speeds, hence pleasant levels of comfort
> low sound development when correctly designed
> low investment and maintenance costs
> supply air outlets visually identical to Katherm trench units
> no wear parts / no electrically rotating parts

COMFORT

Comfort also plays a key role in air conditioning. We'll help you to consider this aspect when designing a project using Kampmann trench convectors, at the same time as complying with the current guidelines in EN 15251 (in future EN 16798 Parts 1 and 2) and EN ISO 7730. Essentially the following recommended values can be assumed:

FOR HEATING:
Supply air outlet air temperature: 20 – 26 °C
(but not lower than the room temperature)
Outlet air speed: < 1.5 m/s distance of supply air trench to the occupied zone: > 0.5 m

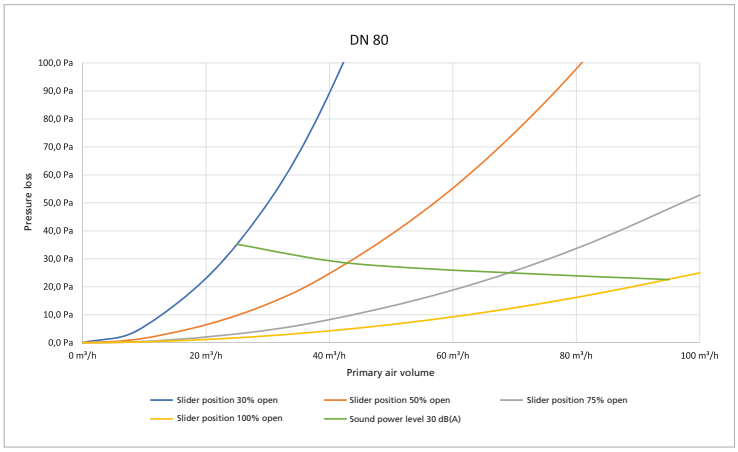
FOR COOLING:
Supply air outlet air temperature:
< 4 K below room temperature outlet speed:
< 1.2 m/s distance of supply air trench to the occupied zone: > 1 m

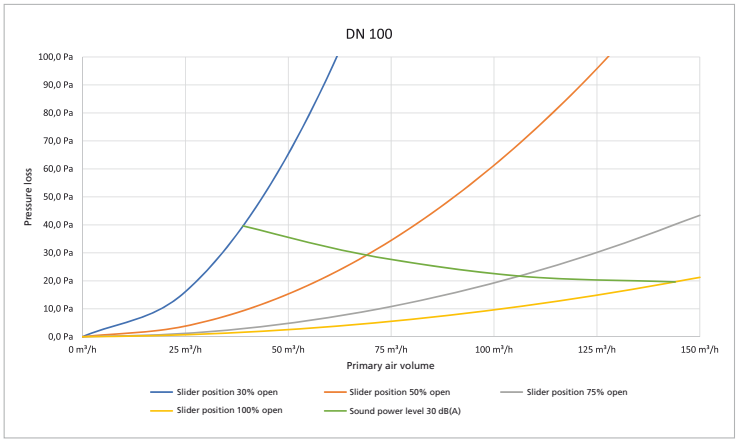
OTHER PARAMETERS
In individual cases, additional parameters, such as room and supply air humidity, as well as leaving air speed, need to be taken into consideration. (See EN ISO 7730)

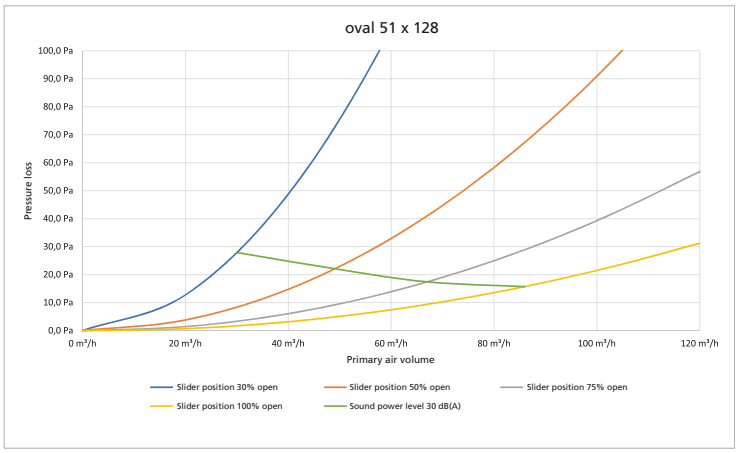
ADDITIONAL INFORMATION
The supply air models Katherm ZL can be used for cooling, heating or isothermic air exchange using preconditioned primary air. A spigot or connection at the front end is also possible with appropriate trench dimensions and sufficient space in the air outlet area (examination on request!).

The upper limit of the air volume in the spigot is calculated from the maximum air speed and cross-section of the spigot. This speed should not exceed 3.0 m/s to avoid additional sound emissions. The resulting air-side pressure losses vary according to the air volume as per the diagram.

Design diagrams





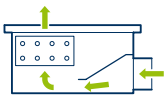


SUPPLY AIR VERSIONS

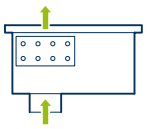
KATHERM NK

with natural convection and additional output
increase through convection with conditioned supply air.

WITH SIDE SUPPLY AIR SPIGOTS

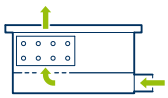


With air guidance through the convector.

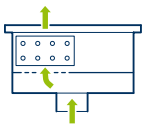


With air guidance throughthe convector and perforated plate underneath the convector.

WITH SUPPLY AIR SPIGOT BELOW



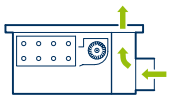
With air guidance through the convector.



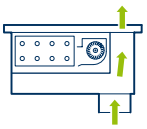
With air guidance through the convector and perforated plate underneath the convector.

KATHERM QK

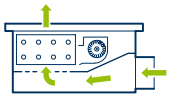
with fan-assisted convection and supply of fresh air.



With air guidance through a separate discharge duct.



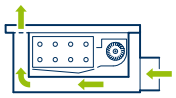
With air guidance through a separate discharge duct.



With air guidance through the convector and perforated plate underneath the convector.

KATHERM HK

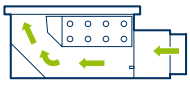
for heating and cooling with fresh air supply separate from the air flow from the fan.[1)]



With air guidance through separate supply air modules.

KATHERM ID

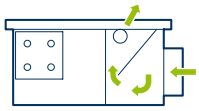
for heating and cooling with fresh air supply without a fan.



With supply air feed under the coil.
Secondary air is drawn along through the coil.

KATHERM QL

with natural convection and comfortable supply of displaced air even for heating. Fresh air always improves the quality of air in a room.



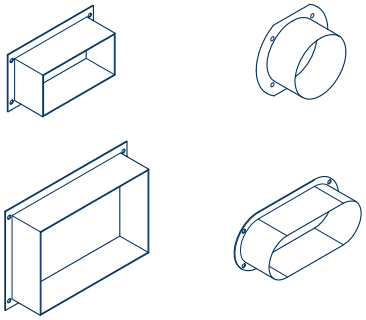
With separate supply air guidance by natural convection even for heating. (Displacement ventilation)

[1)] Guarantees no adverse impact on output or condensation.

The trench dimensions are not feasible? They are!

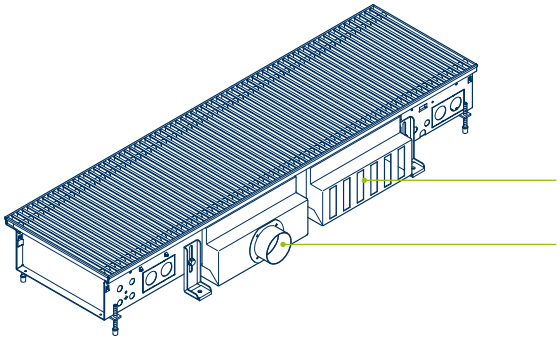
With all trench models, empty trenches with supply air spigots can be integrated into other trench models to introduce supply air. Alternatively these trenches can also be used as pure exhaust air trenches.

DIMENSIONS OF SUPPLY AIR MODELS



Dimensions	Max. air volume/spigot
	[m³/h]
DN 60	31
DN 70	42
DN 80	55
DN 100	85
DN 125	133
DN 150	191
51 x 128 oval	65
50 x 100 square	54
100 x 150 square	162

ALTERNATIVE FEED OF SUPPLY AIR THROUGH A PRESSURISED FLOOR



The drawing shows a Katherm HK with supply air box for spigots and for a pressurised floor (by way of example).

Supply air box for pressurised floor

Supply air box with DN 80 spigot

BEST SUPPORT
FOR YOUR PROJECT

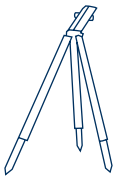
We are always there for you – in person. Wherever you are.
We offer a range of design support tools: smart apps
and calculation programs, BIM data and CAD drawings.

CONSULTATION

Apart from comprehensive advice and design of the building services systems on site, we can also provide the precise documentation you required for every project.

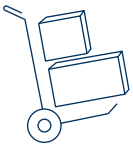
DESIGN

We would be pleased to produce project-specific design drawings and wiring diagrams for your project to make your design easier.



SITE MEASUREMENT

Site measurement is done by our own Kampmann technicians using 2D or 3D lasers to avoid inaccuracies. That way we ensure a precise and efficient site measurement process.

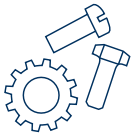


DELIVERY

Kampmann products are delivered sorted on pallets to site. By clear position labelling on the packaging, the delivery can be assigned to the correct floor and installation location.

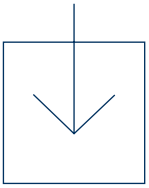
INSTALLATION

We can support you with our own installation team. The trench units are configured to help the heating contractors on site. Skilled professionals then connect up the water pipes and electrics.



CUSTOMER SERVICE

Rely on the organisation and implementation of the global service assignments by our Customer Service team. Our Kampmann service specialists will look after you at 3 sites with over 130 trained contract engineers at 80 national and international sites.



BIM DATA SETS

Use the BIM data sets for Kampmann Katherm trench units for seamless workflows throughout your design phase. They include unit dimensions, technical dimensions of water and electrical connections and performance data.

SCHLOSS ELMAU RETREAT, **ELMAU-KLAIS / GERMANY**

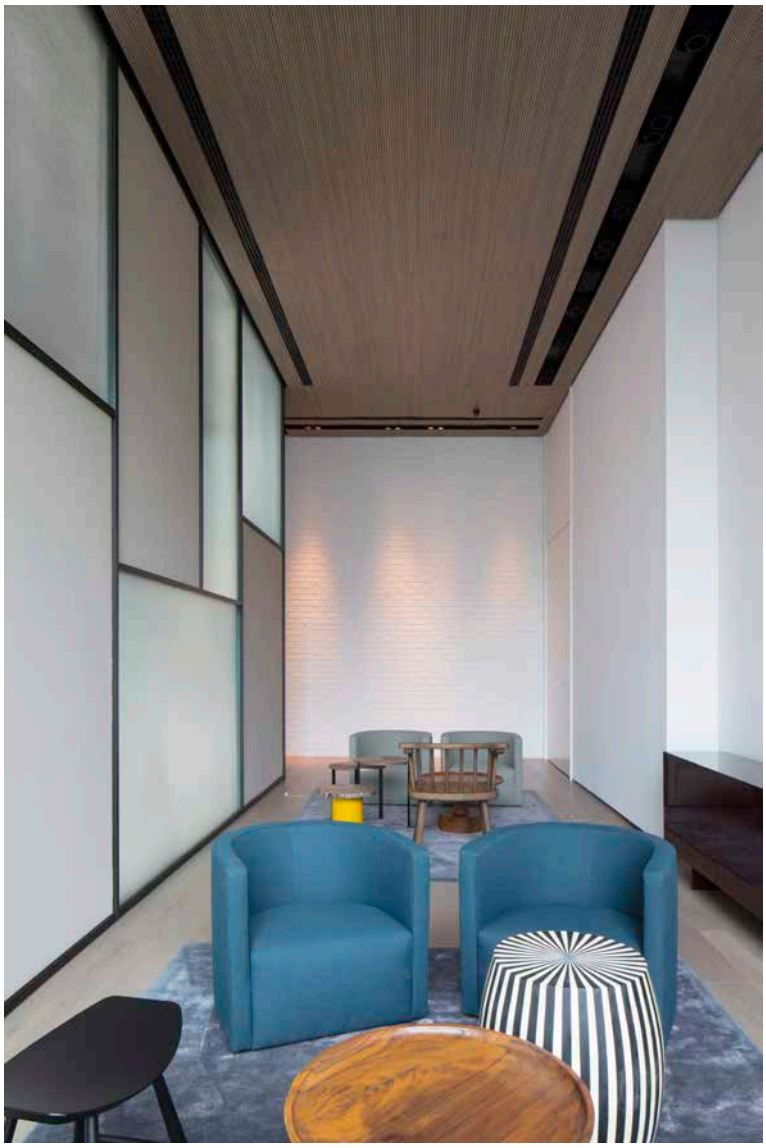
Another historical chapter was added to the long and thrilling history of Schloss Elmau on 7 and 8 June 2015: the Heads of States of the G7 countries discussed issues of global interest at the G7 Summit. The conference was held at the "Schloss Elmau retreat", a new building only opened in April 2015 and located directly adjacent to the castle itself.

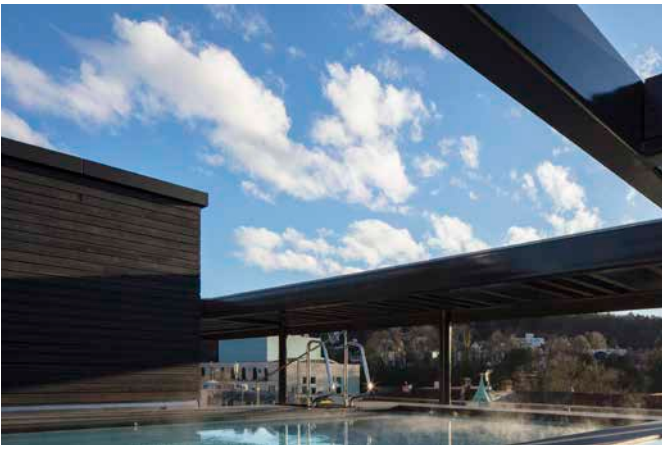
QUARTIER BELVEDERE CENTRAL, **VIENNA / AUSTRIA**

The "Quartier Belvedere Central", abbreviated to QBC, is an extraordinary project – not just because of its scale. Six buildings with a total gross floor area of 130,000 square metres will be built on a 25,000 square metre area of land. The QBC includes, among other things, hotels, offices, apartments, shops and restaurants – a mix that breathes life into the district even after dark.


NOVOTEL

HOTEL ROOMERS, **BADEN-BADEN/ GERMANY**

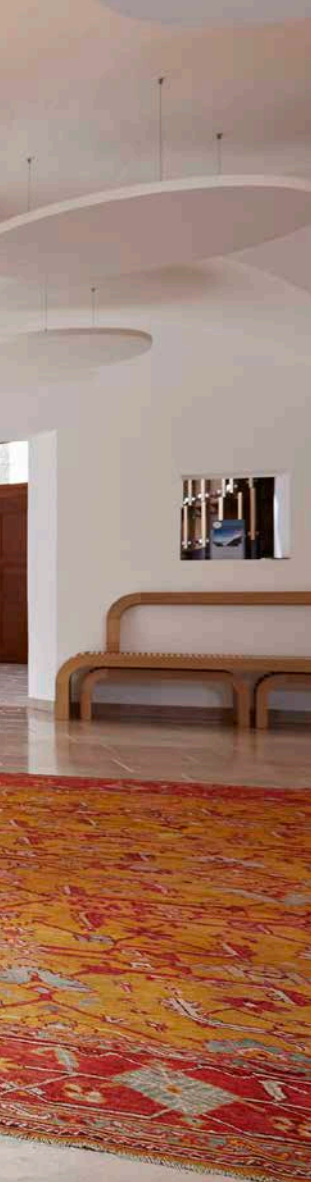




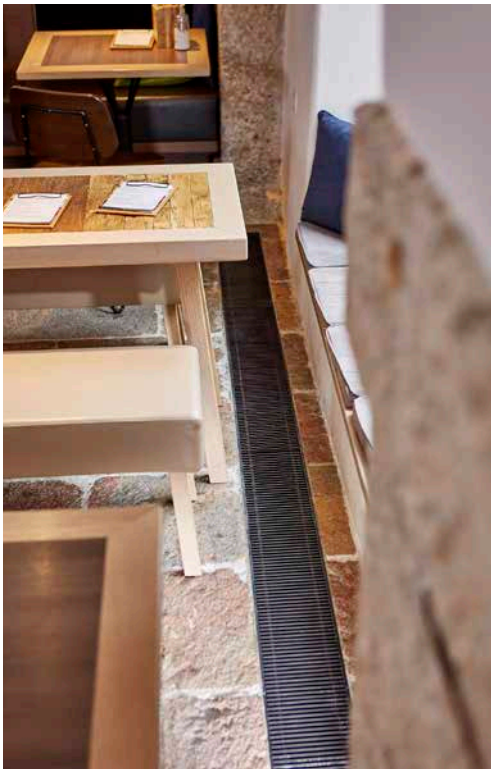
The designer "Roomers Baden-Baden" hotel opened in October 2016, with a perfect location, very close to the Festival Hall. The overall interior design concept and the room design was in the capable hands of the renowned Italian designer Piero Lissoni.

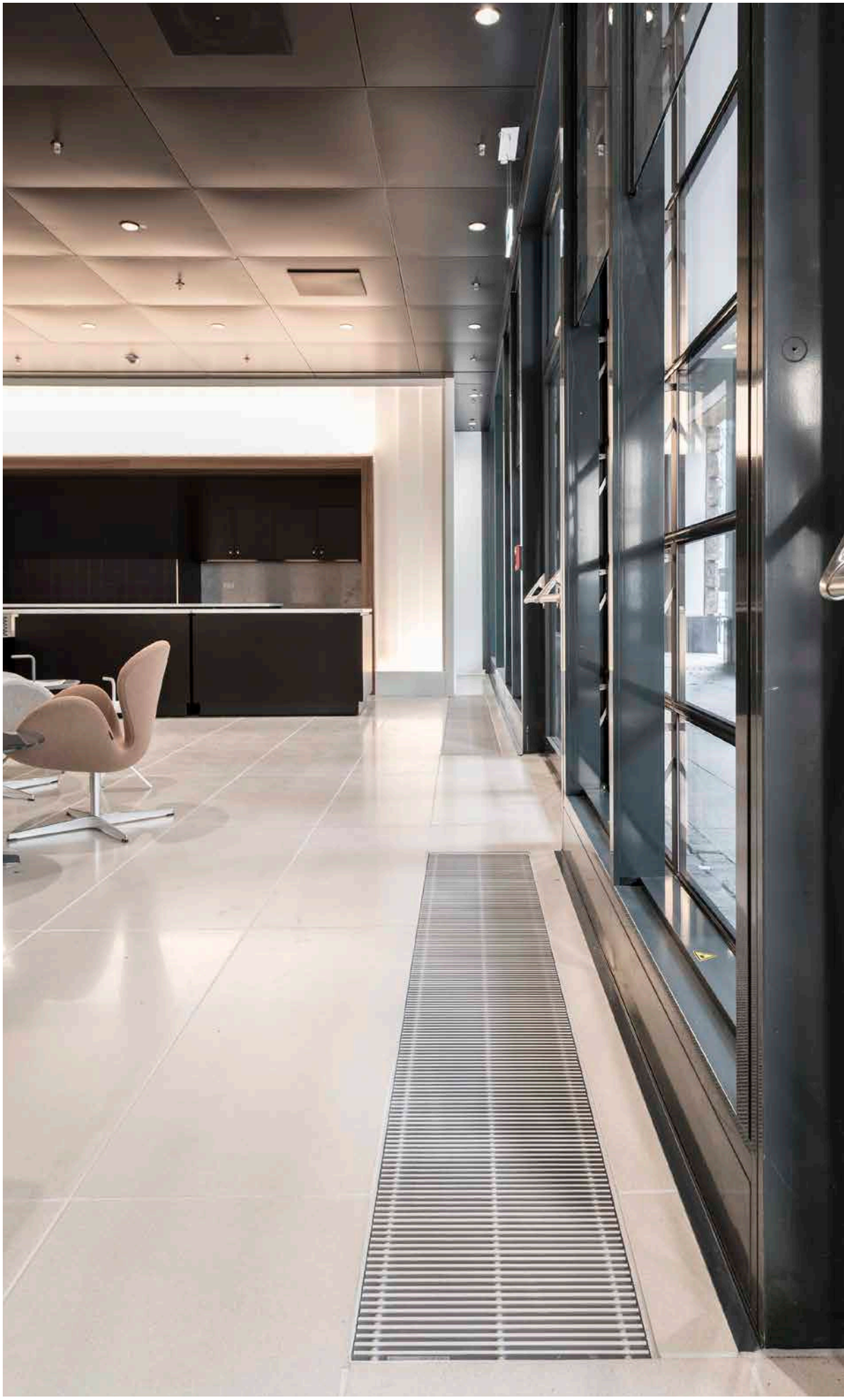
The convectors provide effective cold air screening in front of the large expanses of glazing in the new restaurant area and staff room in Hellbrunn Castle. The bronze anodised grilles match the rustic interior fit-out perfectly.

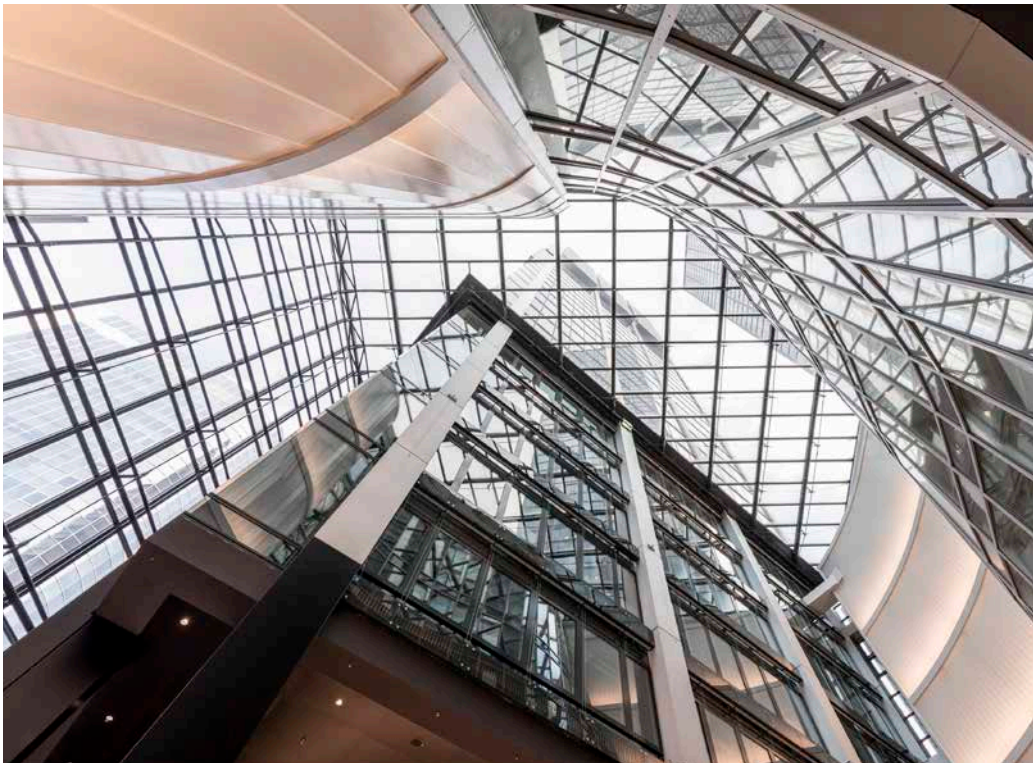
The high heat output of the convector was measured and confirmed in accordance with EN 16430. At the same time, the Katherm NK is ideal for energy-saving low-temperature operation.



HELLBRUNN CASTLE, **SALZBURG / AUSTRIA**

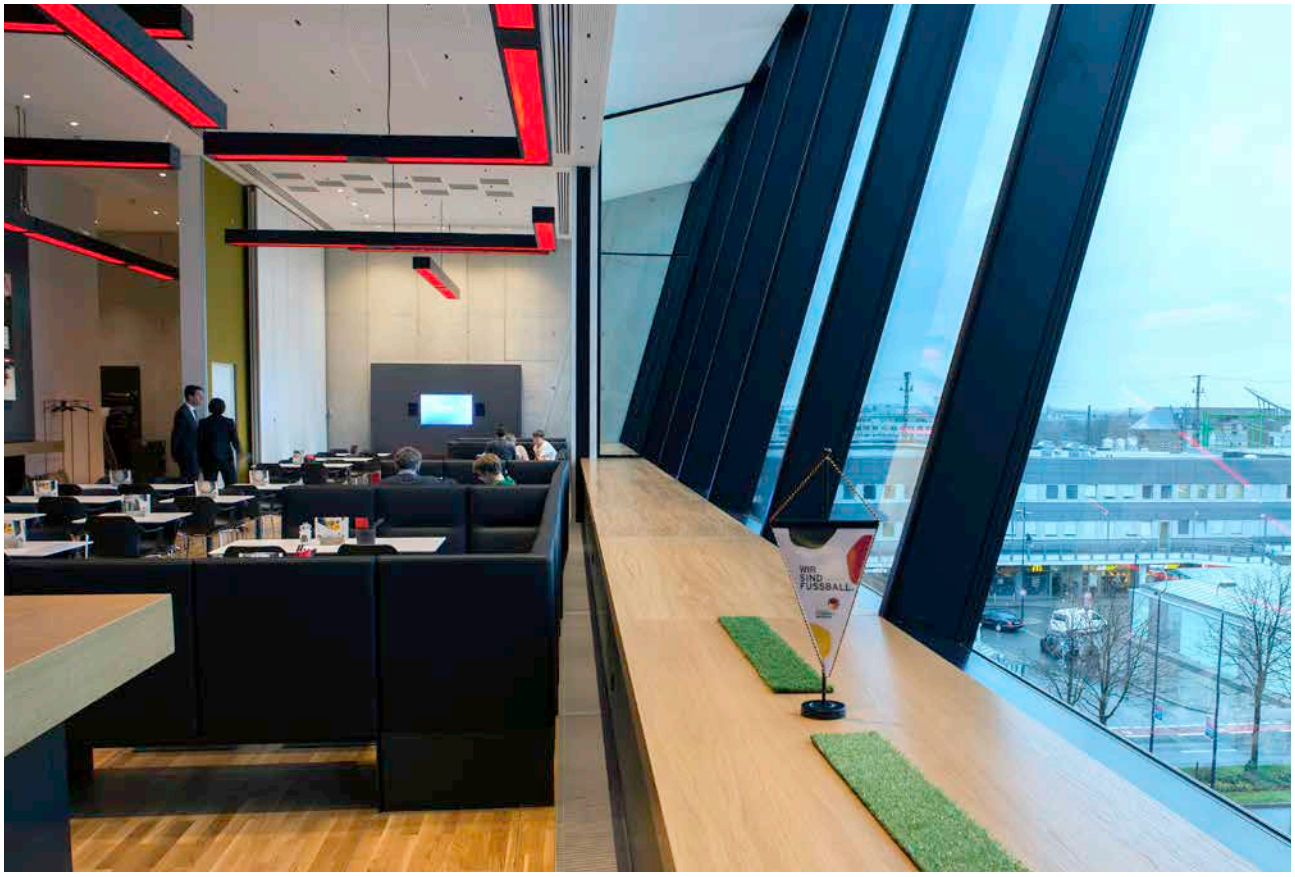




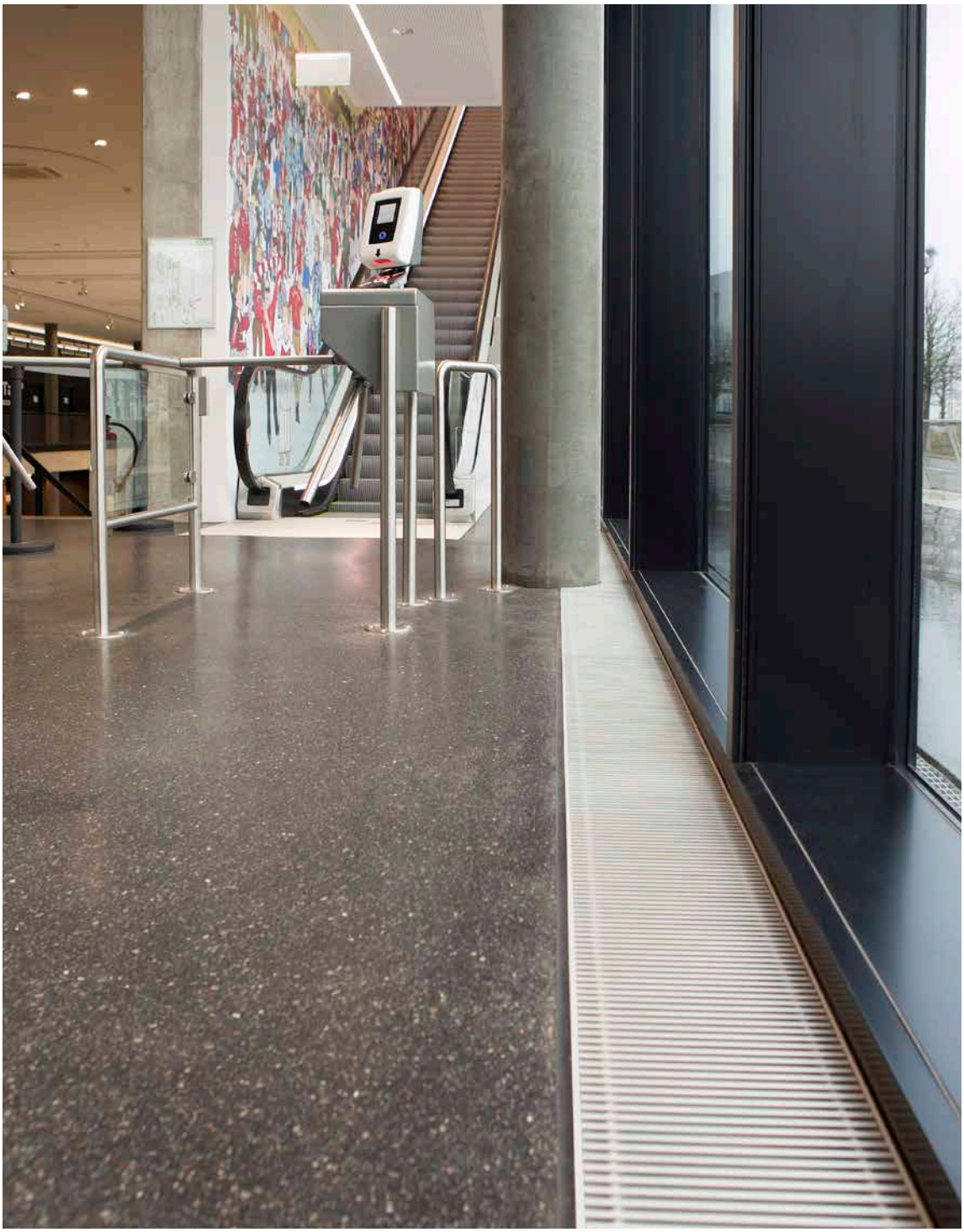


EUROTHEUM, **FRANKFURT AM MAIN/ GERMANY**

The Eurotheum is a high-rise building right in the heart of Frankfurt's banking district. Its immediate neighbour is the Main Tower, Germany's fourth tallest building. Only half its size, the Eurotheum comes across like its little brother – although "little" is still an impressive 110 metres. And in reality, the Main Tower and Eurotheum were both built at the same time, with both being released for occupation in 2000.



GERMAN FOOTBALL MUSEUM, **DORTMUND / GERMANY**



The site of the German Football Museum was determined in a multi-stage process – and a better site could not have been chosen. The museum is located in central Dortmund, a city with a major club and even greater footballing enthusiasm, which can be perfectly reached from all directions and is located directly opposite the main railways station. The museum was designed by architects HPP (Hentrich-Petschnigg & Partner), based in Düsseldorf. "An ecologically and economically sustainable and efficient construction" was crucial to the German Football Association. That is one reason why Kampmann trench units is installed underneath the high glazed façades around the ground floor and café.

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