



05/2006

Katherm NK

Quality is our benchmark

Kampmann – the name today is synonymous with innovative and intelligent systems in the fields of heating, cooling and ventilation and, over the last 33 years, the Company has grown into an internationally-renowned group of companies.

Performance and quality are the benchmark for the continued success of Kampmann. Kampmann products are defined by their high performance capability, with guaranteed EN-tested heat outputs, materials fully rated to requirements, first-class workmanship, design-orientated form and shaping and fast delivery times. The quality management system has been documented for many years and is certified by DIN 9001:2000.

Kampmann systems for heating, cooling and ventilation:

- high-output convectors
- underfloor heating and cooling systems
- air handling systems
- door air curtains
- façade heating systems
- air conditioning systems
- radiant ceiling panels
- floor and façade ventilation systems
- fresh air climate with **OXYCELL TECHNOLOGY**

Versatility

The wide product range comprises a mix of standard, non-standard and products tailor-made for specific projects. Kampmann systems are currently proving their reliability and efficiency in industrial, commercial and private buildings around the globe.

Sales

Kampmann places great emphasis on technical discussions and collaboration with architects, project engineers, heating contractors and builders, as well as with wholesalers. In Germany some 50 sales engineers, operating out of six regional offices, and a further 70 sales engineers working in 14 subsidiary offices throughout Europe provide on-the-spot technical assistance.

HQ and production

In addition to the Kampmann headquarters building in Lingen (Ems), there is a second production plant in Gräfenhainichen (Sachsen-Anhalt). The high-quality products are developed, manufactured and sold by a total workforce of over 550 employees in a production area of more than 55,000 m².

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Katherm NK – natural convection **- in a wide range of dimensions**

Katherm NK natural convection floor duct heaters are ready-to-install duct heaters which are ideal for fitting along large full-height expanses of glazing. These units provide cold air screening using the principle of natural convection itself and come into their own when free-standing radiators are unacceptable from an aesthetic design point of view.

Katherm NK simultaneously disperse cold air throughout the whole body of a room. Katherm NK are not just useful when providing secondary heat but have proved their worth time and time again as the primary heat source.

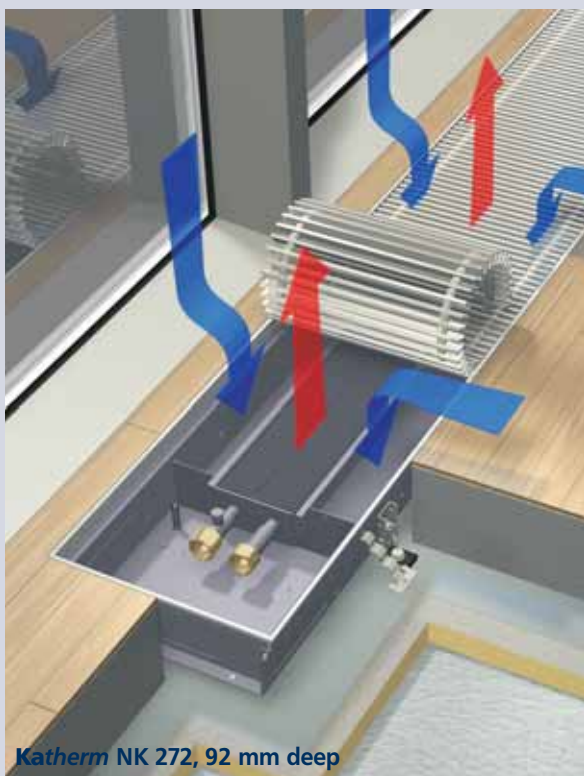
Katherm NK come in four duct widths for all applications (Katherm NK 182 = 182 mm wide):

- Katherm NK 182
- Katherm NK 272
- Katherm NK 340
- Katherm NK 400
- A range of duct heights – 92, 120, 150 and 200 mm.
- **PowerKon** high-output convectors – copper pipes with aluminium fins have low water content to guarantee versatile controllability and rapid warm-up – with **Eurokonus valve connections**.
- Heat outputs have been tested in accordance with EN 442, are registered by DIN CERTCO and monitored under registration no. 6R 1068.

1.45 Katherm NK - Natural convection

Ready-to-install floor duct convectors

Type numbers · Grille finishes



Katherm NK 272, 92 mm deep

1	4	5	0	4	09	1	11	12	Type no.
									Length key
									12 = NP 850 mm
									20 = NP 1250 mm
									30 = NP 1750 mm
									40 = NP 2250 mm
									50 = NP 2750 mm
									60 = NP 3250 mm
									70 = NP 3750 mm
									80 = NP 4250 mm
									90 = NP 4750 mm
									95 = NP 5000 mm
									Grille finish (table on right)
									1 = roll-up grille
									3 = linear grille
									Duct height
									09 = duct height 92 mm
									12 = duct height 120 mm
									15 = duct height 150 mm
									20 = duct height 200 mm
									Overall frame width
									2 = overall frame width 182 mm
									4 = overall frame width 272 mm
									6 = overall frame width 340 mm
									8 = overall frame width 400 mm

Article group

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Grille finishes

11 = aluminium, natural anodized



12 = aluminium, brass anodized



13 = aluminium, bronze anodized



14 = aluminium, black anodized



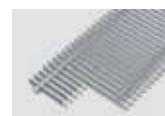
15 = aluminium, bronze effect



16 = aluminium, painted basalt grey, DB 703



31 = stainless steel



32 = stainless steel, polished



33 = natural brass, CuZn 44

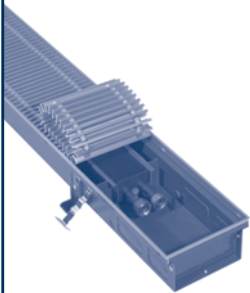
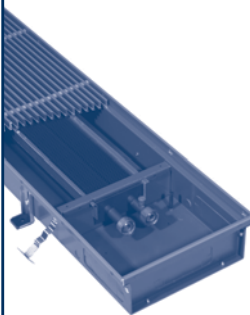
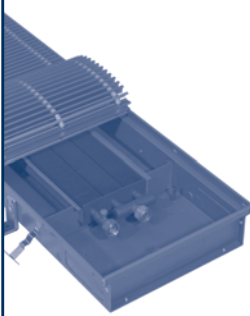


34 = natural brass, CuZn 44, polished, oxydation-proof



Further grille finishes on request

The above grilles are shown using a four-colour printing process and thus do not represent an exact reproduction of the original colour.

	Description	Duct width	Duct length	Duct height	Heat output LPHW 75/65 °C, t _i = 20 °C	Heat output per m finned convector LPHW 75/65 °C, t _i = 20 °C	Heat output per m finned convector LPWW 55/45 °C, t _i = 20 °C	Dimensions
	Katherm NK 182	182 mm	NP 850-NP 5000 mm NP = standard range (500 mm increments) Non-standard (MP) dimensions are also possible	92 mm	122-1043 w	222 w/m	118 w/m	p 16
				120 mm	124-1062 w	226 w/m	119 w/m	
				150 mm	127-1081 w	230 w/m	119 w/m	
				200 mm	157-1344 w	286 w/m	145 w/m	
	Katherm NK 272	272 mm	NP 850-NP 5000 mm NP = standard range (500 mm increments) Non-standard (MP) dimensions are also possible	92 mm	182-1473 w	311 w/m	167 w/m	p 18
				120 mm	206-1667 w	352 w/m	184 w/m	
				150 mm	228-1847 w	390 w/m	198 w/m	
				200 mm	260-2107 w	445 w/m	225 w/m	
	Katherm NK 340	340 mm	NP 850-NP 5000 mm NP = standard range (500 mm increments) Non-standard (MP) dimensions are also possible	92 mm	245-1979 w	418 w/m	221 w/m	p 20
				120 mm	277-2240 w	473 w/m	245 w/m	
				150 mm	307-2481 w	524 w/m	266 w/m	
				200 mm	350-2836 w	599 w/m	307 w/m	
	Katherm NK 400	400 mm	NP 850-NP 5000 mm NP = standard range (500 mm increments) Non-standard (MP) dimensions are also possible	92 mm	302-2448 w	517 w/m	270 w/m	p 22
				120 mm	342-2770 w	585 w/m	305 w/m	
				150 mm	379-3068 w	648 w/m	336 w/m	
				200 mm	433-3509 w	741 w/m	384 w/m	

92 mm duct height is shown

1.45 Katherm NK - Natural convection Ready-to-install floor duct convectors

Description

Katherm NK – cold air screening, primary and secondary heating

Katherm NK are usually installed directly in front of the cold internal surfaces of glazing to achieve optimum heat output and provide cold air screening as well as providing secondary heat throughout the body of the room. If their heat output meets the heat losses, they can also be used to provide primary heat for the whole space.

Using natural convection alone, Katherm NK provides both the benefits of quick warm-up times yet operates whisper-quietly. Katherm NK are supplied as ready-to-install floor duct convectors and are ideally fitted along the front of full-height glazing. Once installed within the floor, all that is visible are the strong yet stylish roll-up or linear grilles, which are available in a wide range of finishes.

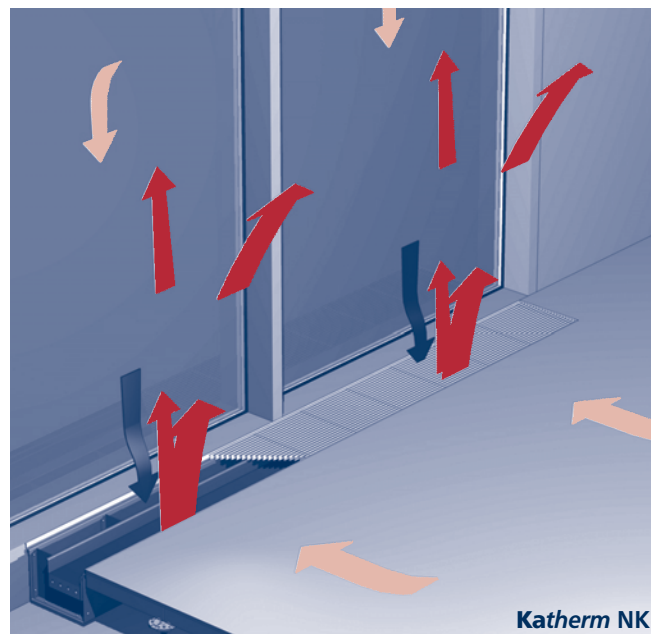
Katherm NK come in four duct widths

- 182 mm (Katherm NK 182)
- 272 mm (Katherm NK 272)
- 340 mm (Katherm NK 340)
- 400 mm (Katherm NK 400)

as well as four duct heights

- 92 mm
- 120 mm
- 150 mm
- 200 mm

all with different outputs to suit all applications. Katherm NK can thus be used in a variety of different applications in offices, sales and conference rooms, in the home and in conservatories.

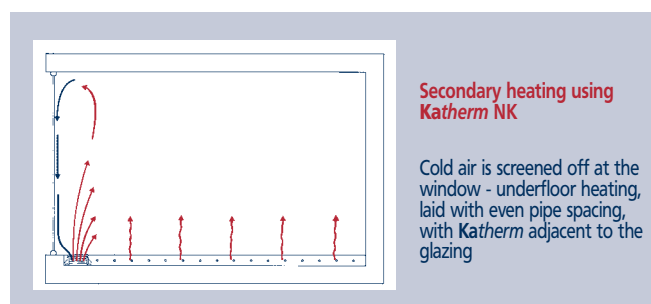


Primary heating

Katherm NK can also be used as the sole, primary heat source in a space if the heat output is sufficient to cover the heat losses. Cold air forming at the window or seeping in through vents falls into the floor duct where it is warmed and rises upwards. The up-draught is further enhanced by the “trench” design of the floor duct. The more air that passes through the convector, the higher the heat output. The heat output is also substantially affected by the height of the “chimney” above the convector - the higher the “chimney” height, the greater the heat output.

Katherm NK - the engineering at a glance

- sendzimir galvanized floor duct; all visible surfaces painted graphite grey so that they cannot be seen through the grille
- self-supporting design complete with height adjustment feet and screed anchors
- shallow design - perfect for installation in screeded floors
- raised floor height adjustment feet (optional), allow the units to be installed within raised floors
- PowerKon high-output convectors - copper pipes with aluminium fins - are also painted graphite grey and have low water content to guarantee rapid warm-up and versatile controllability.
- Eurokonus valve fittings - simple and quick to fit
- operates with LPHW 75/65 °C but also with lower temperatures of LPWW 50/40 °C
- cost-saving, simple and easy to install



Secondary heating

Underfloor heating alone is often very slow to react, particularly as the entire mass of screed has to heat up first. In spring and autumn it is often possible to do without heating during the day and, in the cooler evenings, Katherm NK can provide quick on-demand heating without having to call upon the underfloor heating. Underfloor heating and floor duct heating complement each other perfectly because of their different methods of providing heat.

Description

Guaranteed heat outputs - DIN tested

Katherm NK heat outputs have been tested at the HLK Standard Test Centre in Stuttgart in accordance with EN 442, are registered by DIN CERTCO and are monitored under registration no. **6R1068**.



Standard (NP) and non-standard (MP) ranges

Katherm NK standard (NP) units are supplied in lengths of between 850 and 5000mm, increasing in 500mm increments. Non-standard (MP) units can be supplied in any length up to a maximum single duct length of 5000mm.

PowerKon - the new generation of convectors

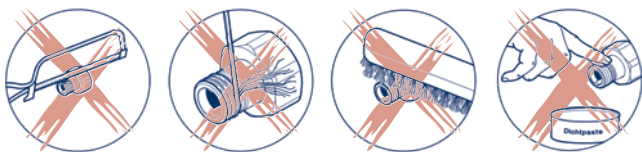
The greater the surface area, the higher the output - the new Kampmann cooper/aluminium convector! Corrugated fins create a larger surface area in comparison with conventional convectors. This results in greater performance whilst the external dimensions of the convector remain unchanged.

The convector itself is now also stronger and more rigid due to the new multiple pressing process and the pipe/fin joint has also been further improved.

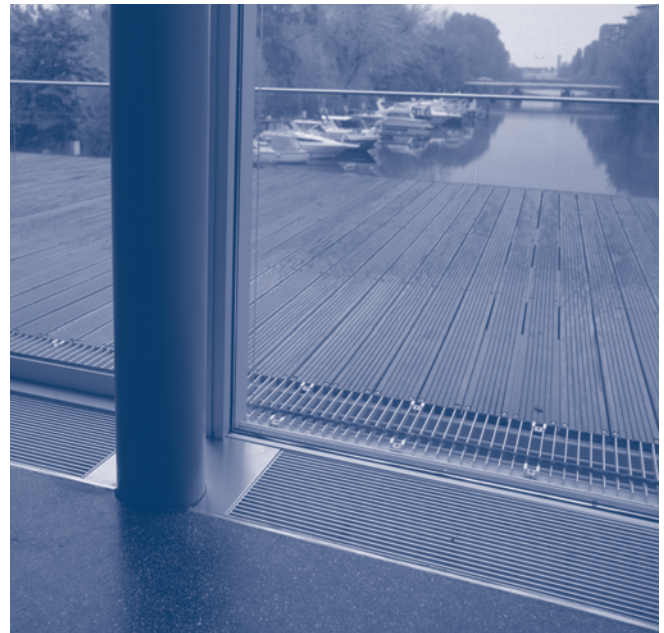
The Eurokonus valve fitting - simple to use and saves you money!

The Eurokonus valve fitting fits all valves which comply with DIN V 3838 i.e all valves from reputable manufacturers.

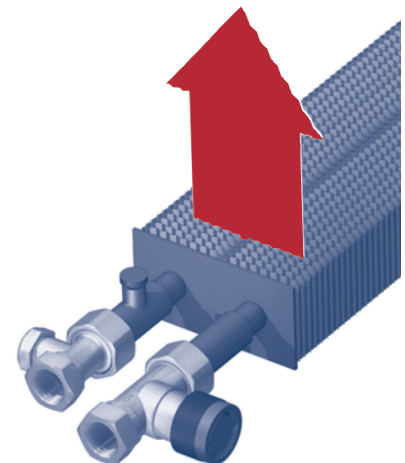
The key benefit is its simplicity of use: the Eurokonus valve fitting requires no additional sealing. Just screw it in - and the job's done! This saves time and money, not forgetting the reduced fitting/testing time and savings in terms of material. Venting is also much simpler - instead of a "venting flag", there is a rigid venting screw in the fitting itself.



Eurokonus: no more sealing!



Description



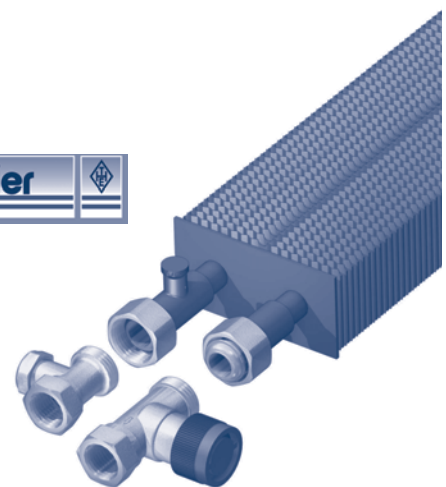
PowerKon convector

oventrop

Innovation + Qualität

Heimeier

Danfoss

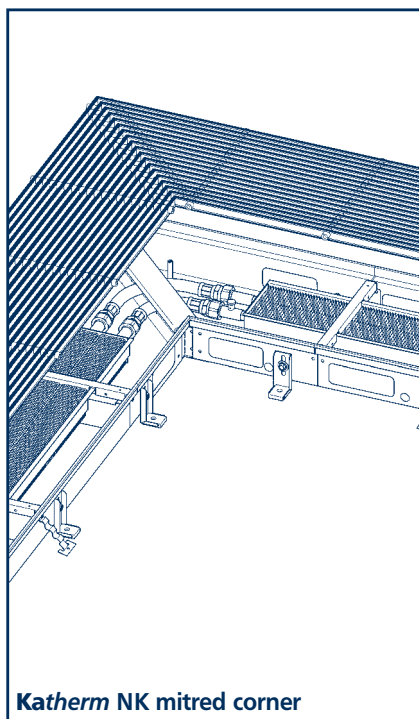


PowerKon convector with valve fitting

1.45 Katherm NK - Natural convection

Ready-to-install floor duct convectors

Accessories

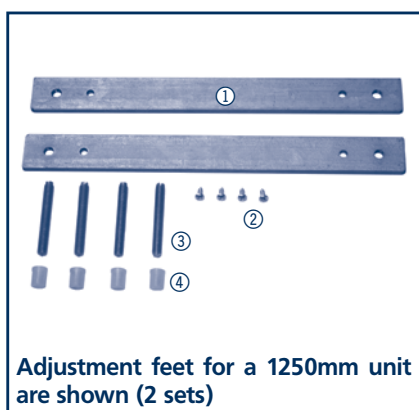


Mitred corners

The grille bars are cut on the mitre, the floor ducts are slip-jointed together and the convectors are joined using woven flexible connections.

Mitred corners have to be manufactured to exact dimensions including duct length, diagonals, angles and an indication of room/window side.

Type numbers					
Grille type	Mitre	NK 182	NK 272	NK 340	NK 400
Roll-up grille	90°	145980	145981	145983	145982
	non-90 degree	145970	145971	145973	145972
Linear grille	90°	245980	245981	245983	245982
	non-90 degree	245970	245971	245973	245972



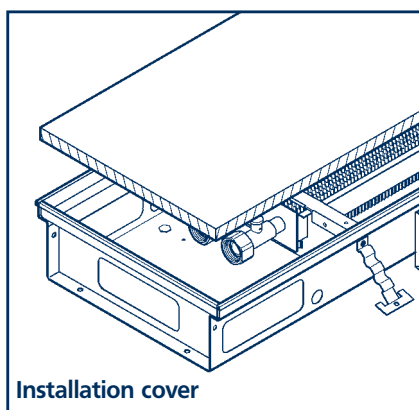
Raised floor height adjustment feet (optional)

for use with **Katherm NK**, each set comprising:

- 1 x iron bar ①,
- 2 x screws ②,
- 2 x M8 adjustment screws ③ with sound insulation ④ ;

A more detailed description and fitting advice can be found on p 25

Raised floor height adjustment feet				
Katherm	NK 182	NK 272	NK 340	NK 400
Type	14521	14531	14551	14541

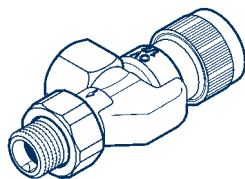


Installation cover

If required, all **Katherm NK** can be supplied with their grilles packed separately to prevent them from becoming soiled or damaged on site prior to fitting. The floor duct is supplied with a disposable installation cover.

Katherm NK installation cover				
Katherm	NK 182	NK 272	NK 340	NK 400
Type	146984	146985	146987	146986

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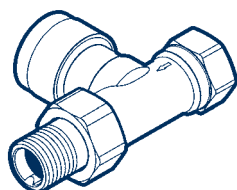


1/2" valve body, type 246909

1/2" valve body, type 246909

An axial valve body; low noise, optimum flow with Niro steel spindle and double o-ring seal; for use with **Katherm NK 182** when using actuator type 146905 and thermostatic valve head (with remote sensor) type 146907, complete with cap

Max. operating temperature	120 °C
Max. operating pressure	10 bar



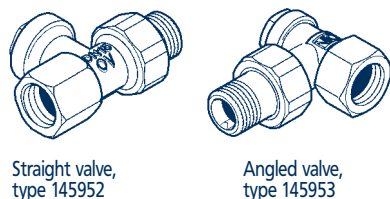
1/2" valve body, type 146909

1/2" valve body, type 146909

A straight valve body; low noise, optimum flow with Niro steel spindle and double o-ring seal;

for use with **Katherm NK 272**, **Katherm NK 340** and **Katherm NK 400** when using actuator type 146905 and thermostatic valve head (with remote sensor) type 146907, complete with cap

Max. operating temperature	120 °C
Max. operating pressure	10 bar

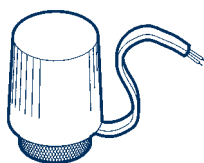


Return shut-off valve

1/2" Return shut-off valve, type 145952, straight; type 145953, angled

Brass valve with nickel-plate housing with o-ring seal

Max. operating temperature	120 °C
Max. operating pressure	10 bar

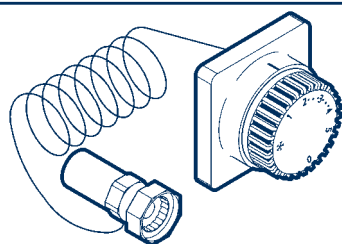


Thermoelectric actuator 230 V, type 146905

Thermoelectric actuator 230 V, type 146905

Actuator for use with valve body type 246909 and type 146909; cable must be laid within a pipe

Power intake	approx. 5 w
Cable length	approx. 1900 mm
Height	69 mm
Diameter	42 mm
Connecting thread	30 x 1.5 mm



Thermostatic head with remote sensor, type 146907

Thermostatic head with remote sensor, type 146907

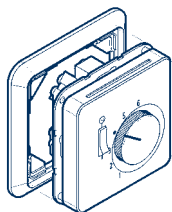
Liquid-filled thermostat with 5 m capillary tube; maximum and minimum temperatures are limited or blocked; the capillary tube must be laid within a Ø 23 mm pipe.

Housing	white
Temperature range	+8 to +27 °C
Max. sensor temperature	+50 °C
Frost protection	below +6 °C

1.45 Katherm NK - Natural convection

Controls

Room and clock thermostats

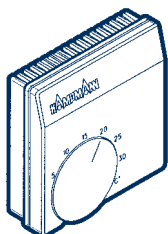


Room thermostat, type 146927

Room thermostat, type 146927

Flush-mounted with white front panel and frame, with temperature indicator, main on/off switch with indicator, thermal setback and additional terminal for night setback (4K) using external time switch

Housing	Jung system, flush-mounted, white
Voltage	230 V/50 Hz
Temperature range	5 - 30 °C
Protection	IP 20
Dimensions W x H x D	65 x 65 x 42 mm

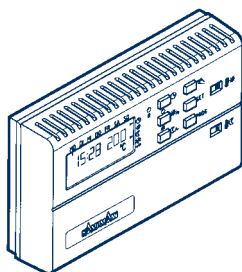


Room thermostat, type 146904

Room thermostat, type 146904

in attractive surface-mounted housing; with thermal setback; a Ø 55 mm back-box is required for fixing

Housing	surface-mounted, white
Voltage	230 V/50 Hz
Temperature range	5 - 30 °C
Switching differential	0,6 K
Protection	IP 30
Dimensions W x H x D	70 x 70 x 35 mm

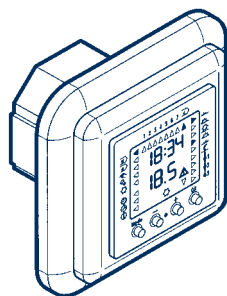


Clock thermostat, type 146910

Clock thermostat, type 146910

A clock and room thermostat in one; precise digital clock for week or day programming of room temperature and setback temperature; party function (setback interval override) is also possible; to set day or night temperature

Voltage	230 V/50 Hz
Temperature range	10 - 30 °C
Protection	IP 20
Dimensions W x H x D	140 x 70 x 30 mm



Clock thermostat, type 146932

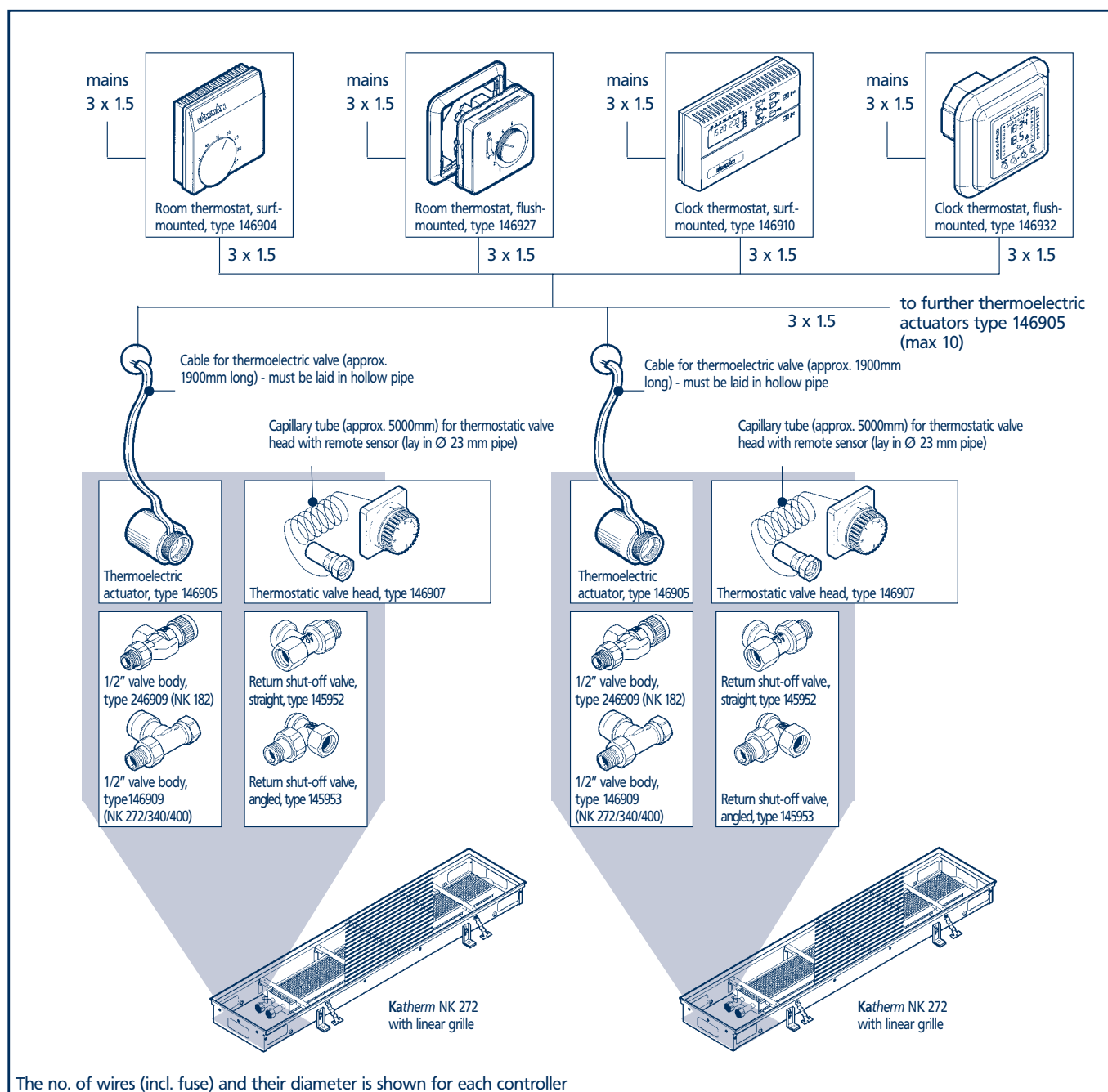
Clock thermostat, type 146932

Digital clock and room thermostat in one; with electronic 2-point control; display showing set and actual temperatures; easy to use 4-button control; day or week programming; party function and frost protection

Voltage	230 V/50 Hz
Temperature range	5 - 30 °C
Protection	IP 20
Power reserve	approx. 1 hour
Contact	change-over contact, single-ended
Max. amperage	2 A
Dimensions	W x H x D: 84 x 84 x 18 mm

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Controller combinations



The no. of wires (incl. fuse) and their diameter is shown for each controller

Valve type numbers

Katherm		NK 182	NK 272	NK 340	NK 400
Valve body	connection	1/2", type 246909	1/2", type 146909	1/2", type 146909	1/2", type 146909
Return shut-off valve	connection	1/2", type 145952	1/2", type 145952, type 145953		

Controls option 1

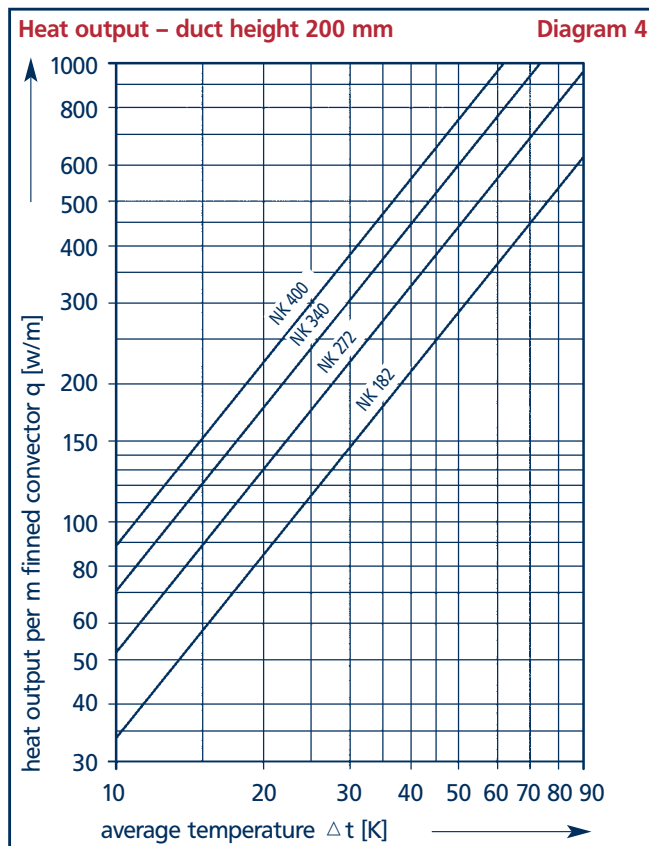
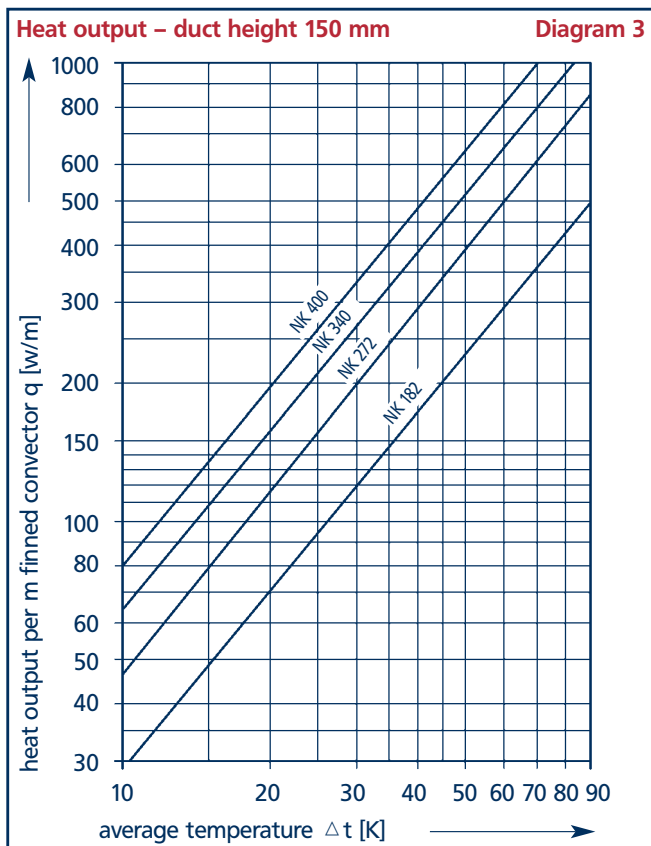
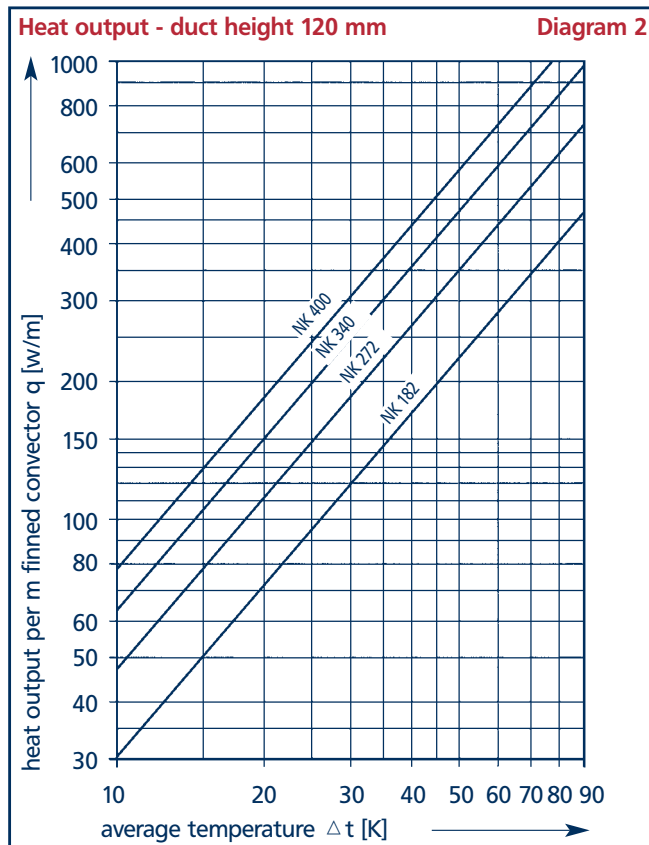
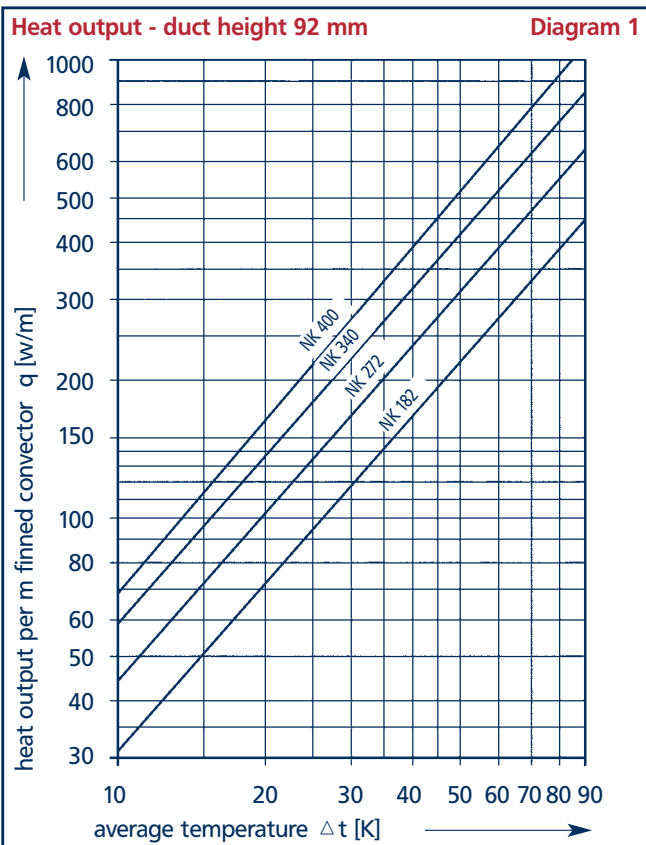
The first option is to combine a room thermostat and the appropriate number of actuators and valves. The required room temperature is set using the room thermostat. When the temperature falls below this temperature, the thermoelectric actuator opens the water-side valve.

Controls option 2

A non-electrical option is to use a liquid-filled thermostatic valve head with a remote sensor and 5m capillary tube with a valve body. A Ø 23 mm pipe should be laid to each valve body within each floor duct heater.

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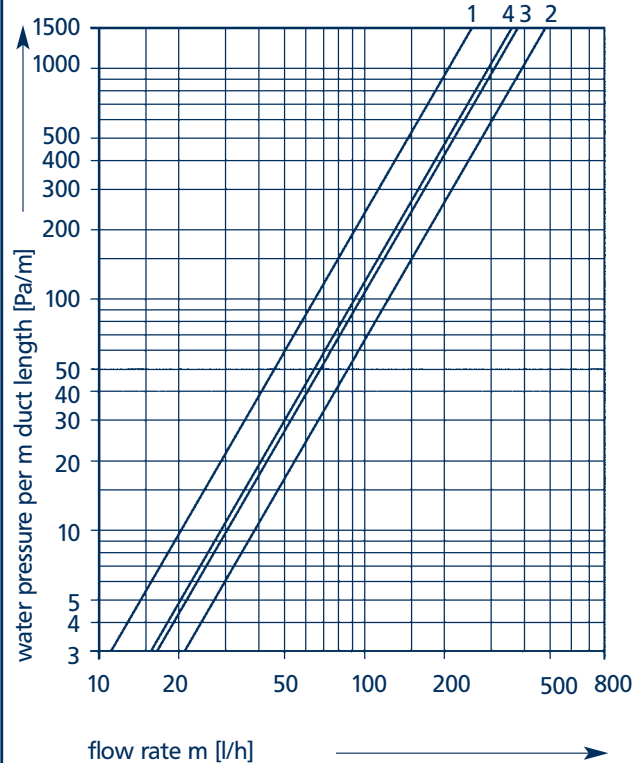
Heat output diagrams



Water pressure · Heat output calculation and conversion

Water pressure Katherm NK

Diagram 5



Heat output calculation

If the water temperatures used are not shown in the tables, they can be calculated using the formulae, tables and diagrams on this page.

Water pressure (Diagram 5)				Table 1
Katherm	NK 182	NK 272	NK 340	NK 400
Duct height [mm]	92 120 150 200	92 120 150 200	92 120 150 200	92 120 150 200
Graph	1	2	3	4

"Dead" lengths		Table 2
Katherm	"Dead" length K _B	
NK 182	300 mm	
NK 272	265 mm	
NK 340	265 mm	
NK 400	265 mm	

Formulae

$$\Delta t = \frac{t_{w1} + t_{w2}}{2} - t_L \quad (1)$$

$$Q = \frac{K - K_B}{1000} \cdot q \quad (2)$$

$$\Delta t_w = t_{w1} - t_{w2} \quad (3)$$

$$m = \frac{Q}{\Delta t_w} \cdot 0,86 \quad (4)$$

$$R = \frac{r \cdot K}{1000} \quad (5)$$

Abbreviations

t _{w1}	[°C]	= flow temperature
t _{w2}	[°C]	= return temperature
Δt _w	[K]	= water temperature difference
Δt	[K]	= mean temperature
t _L	[°C]	= room temperature
Q	[W]	= heat output
q	[W/m]	= heat output per m finned convector
m	[l/h]	= flow rate
R	[Pa]	= water pressure
r	[Pa/m]	= water pressure per m duct
K	[mm]	= floor duct length
K _B	[mm]	= "dead" length (see Table 2)

Heat output calculation

Given:

Floor duct length MP 4100
(non-standard)

Katherm NK 272, H = 92 mm

Flow temperature t_{w1} = 70 °C

Return temperature t_{w2} = 60 °C

Room temperature t_L = 22 °C

Required:

Heat output Q [W]

Water pressure R [Pa]

$$\Delta t = \frac{t_{w1} + t_{w2}}{2} - t_L \quad (1) = \frac{70 + 60}{2} - 22 = 43 \text{ K}$$

from diagram 1, heat output graph NK 272: q = 260 W/m

$$Q = \frac{K - K_B}{1000} \cdot q \quad (2) = \frac{4100 - 265}{1000} \cdot 260 = 997 \text{ W}$$

$$\Delta t_w = t_{w1} - t_{w2} \quad (3) = 70 - 60 = 10 \text{ K}$$

$$m = \frac{Q}{\Delta t_w} \cdot 0,86 \quad (4) = \frac{997}{10} \cdot 0,86 = 86 \text{ l/h}$$

from diagram 5, water pressure graph 2: r = 52 Pa/m

$$R = \frac{r \cdot K}{1000} \quad (5) = \frac{52 \cdot 4100}{1000} = 213 \text{ Pa}$$

Result:

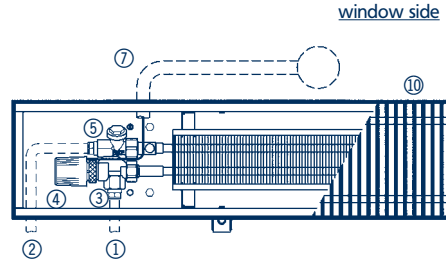
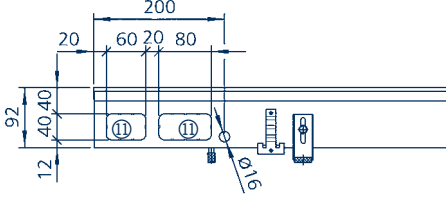
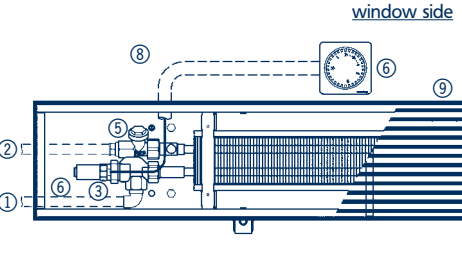
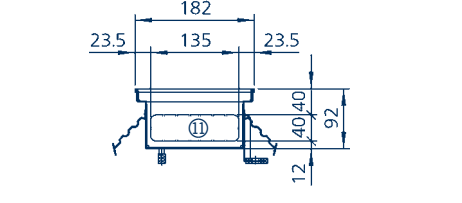
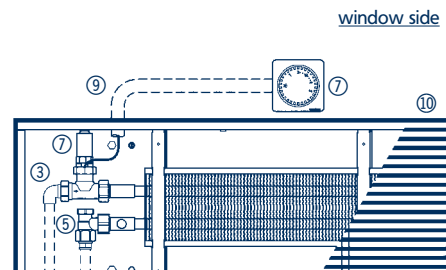
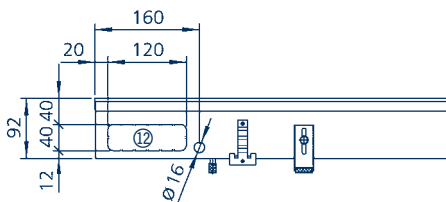
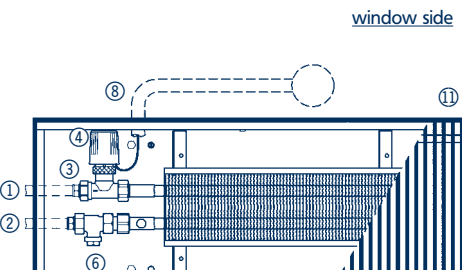
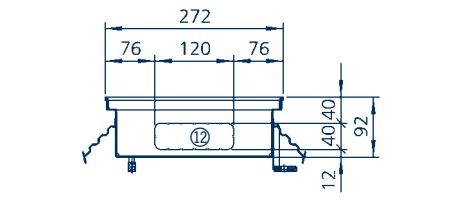
Heat output Q = 997 W

Water pressure R = 213 Pa

1.45 Katherm NK - Natural convection

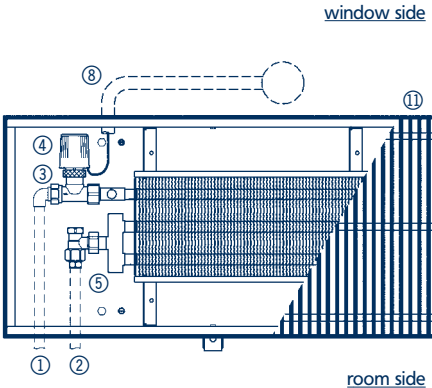
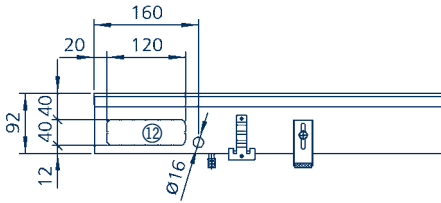
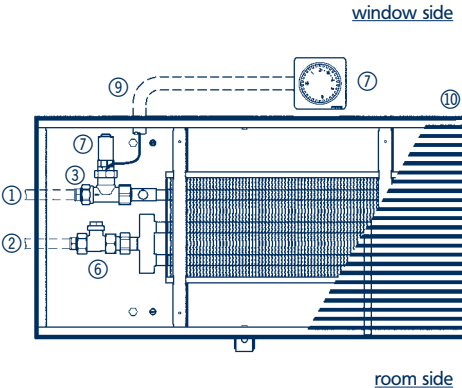
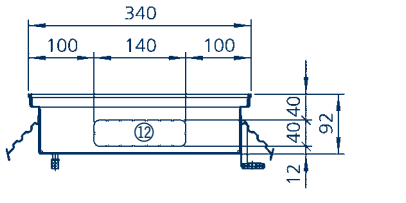
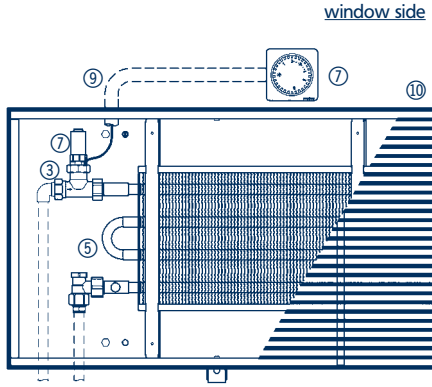
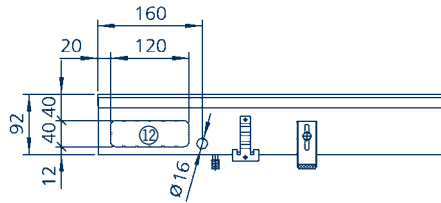
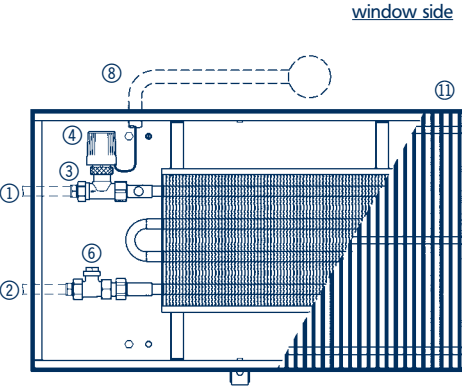
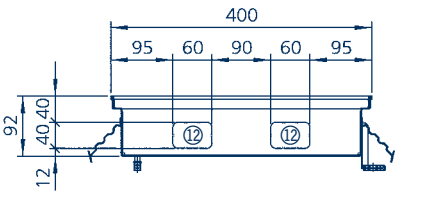
Technical data

Water connections · Pipe entry

Katherm NK 182, Katherm NK 272		
Model	Room-/window-side connection	End connection
Katherm NK 182 ① Flow connection ② Return connection ③ 1/2" valve body, axial, type 246909 ④ Thermoelectric actuator, type 146905 ⑤ Return shut-off valve, type 145952 ⑥ Thermostatic valve head (remote sensor), type 146907 ⑦ Ø 23 mm pipe for connecting cable to thermoelectric actuator (by others) ⑧ Ø 23 mm pipe for capillary tube to thermostatic valve head (by others) ⑨ Unit shown with linear grille ⑩ Unit shown with roll-up grille ⑪ Pipe openings, stamped	window side  room side connection: 1/2", same end, left 	window side  room side connection: 1/2", same end, left 
Katherm NK 272 ① Flow connection ② Return connection ③ 1/2" valve body, straight, type 146909 ④ Thermoelectric actuator, type 146905 ⑤ Return shut-off valve, angled, type 145953 ⑥ Return shut-off valve, straight, type 145952 ⑦ Thermostatic valve head (remote sensor) type 146907 ⑧ Ø 23 mm pipe for connecting cable to thermoelectric actuator (by others) ⑨ Ø 23 mm pipe for capillary tube to thermostatic valve head (by others) ⑩ Unit shown with linear grille ⑪ Unit shown with roll-up grille ⑫ Pipe openings, stamped	window side  room side connection: 1/2", same end, left 	window side  room side connection: 1/2", same end, left 

*Cross-sections only show pipe entry with 92mm deep Katherm NK

Water connections · Pipe entry

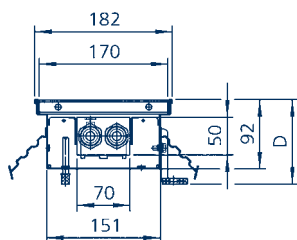
Katherm NK 340, Katherm NK 400		
Model	Room-/window-side connection	End connection
Katherm NK 340 ① Flow connection ② Return connection ③ 1/2" valve body, straight, type 146909 ④ Thermoelectric actuator, type 146905 ⑤ Return shut-off valve, angled type 145953 ⑥ Return shut-off valve, straight, type 145952 ⑦ Thermostatic valve head (remote sensor), type 146907 ⑧ Ø 23 mm pipe for connecting cable to thermoelectric actuator (by others) ⑨ Ø 23 mm pipe for capillary tube to thermostatic valve head (remote sensor) (by others) ⑩ Unit shown with linear grille ⑪ Unit shown with roll-up grille ⑫ Pipe opening, stamped	window side  room side connection: 1/2", same end, left 	window side  room side connection: 1/2", same end, left 
Katherm NK 400 ① Flow connection ② Return connection ③ 1/2" valve body, straight, type 146909 ④ Thermoelectric actuator, type 146905 ⑤ Return shut-off valve, angled, type 145953 ⑥ Return shut-off valve, straight, type 145952 ⑦ Thermostatic valve head (remote sensor), type 146907 ⑧ Ø 23 mm pipe for connecting cable to thermoelectric actuator (by others) ⑨ Ø 23 mm pipe for capillary tube to thermostatic valve head (remote sensor) (by others) ⑩ Unit shown with linear grille ⑪ Unit shown with roll-up grille ⑫ Pipe opening, stamped	window side  room side connection: 1/2", same end, left 	window side  room side connection: 1/2", same end, left 

*Cross-sections only show pipe entry with 92mm deep Katherm NK

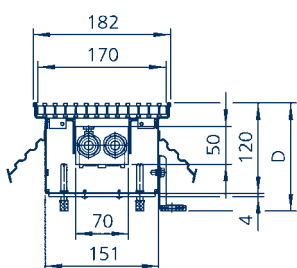
1.45 Katherm NK - Natural convection

Technical data

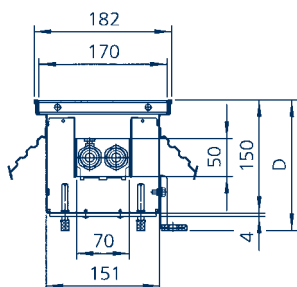
Katherm NK 182 dimensions



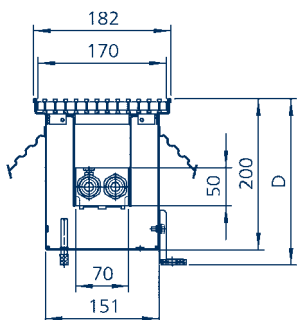
cross-section through 92mm deep duct - unit shown with roll-up grille



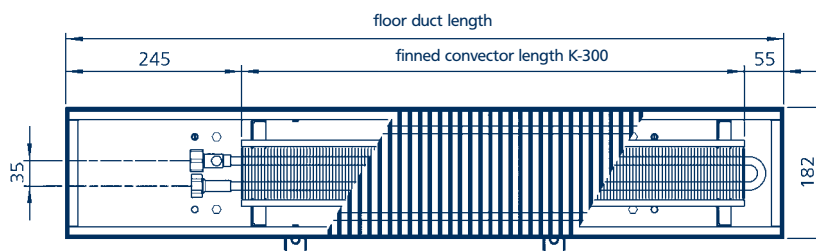
cross-section through 120mm deep duct - unit shown with raised floor height adjustment feet and linear grille



cross-section through 150mm deep duct - unit shown with raised floor height adjustment feet and roll-up grille

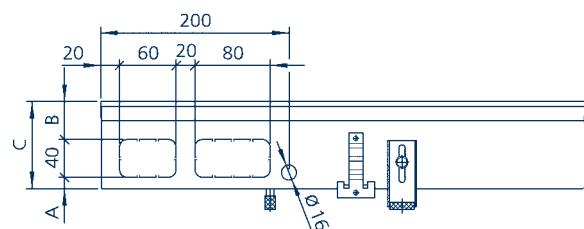


cross-section through 200mm deep duct - unit shown with linear grille

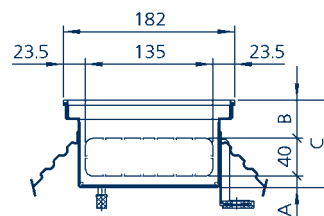


plan view - unit shown with roll-up grille

non-standard (MP) Katherm NK 182 can be manufactured in any length up to a single unit length of 5000 mm.



side view of 92mm deep duct showing pipe openings



end view of 92mm deep duct showing stamped pipe opening

Katherm NK 182 dimensions

Overall frame width	[mm]	182			
Duct width	[mm]	151			
Grille width	[mm]	170			
Duct length	[mm]	850-5000 (please state when ordering)			
Convector height	[mm]	50			
Convector depth	[mm]	70			
Finned convector length	[mm]	K - 300			
Connection, Eurokonus		1/2", same end, left or right			
	A [mm]	12	30	50	60
	B [mm]	40	50	60	100
Duct height	C [mm]	92	120	150	200
Max. adjustment height	D [mm]	129	157	187	237

Katherm NK 182 heat outputs

Katherm NK 182 heat outputs (w)																		
Duct height [mm]		92				120				150				200				Finned convector length [mm]
Duct length K [mm] NP= standard range*	Water temp. LPHW [°C]	Heat output Q [w] at room temperature t _r																
		15 °C	18 °C	20 °C	22 °C	15 °C	18 °C	20 °C	22 °C	15 °C	18 °C	20 °C	22 °C	15 °C	18 °C	20 °C	22 °C	
NP 850	90/70	169	159	153	147	173	163	156	150	177	167	160	153	223	209	200	192	550
	82/71	158	148	142	136	161	152	145	139	165	155	148	141	207	194	185	176	
	75/65	137	128	122	116	140	131	124	118	143	133	127	120	179	166	157	149	
	70/55	115	106	100	94	117	107	101	95	118	109	103	96	147	135	127	119	
	55/45	78	70	65	59	79	71	65	60	80	71	66	60	98	87	80	73	
NP 1250	90/70	292	275	264	254	299	282	270	259	306	288	276	264	385	362	346	331	950
	82/71	273	256	245	235	279	262	251	239	285	267	256	244	358	335	320	305	
	75/65	237	221	211	200	242	226	215	204	247	230	219	207	308	286	272	257	
	70/55	198	183	172	162	201	185	175	165	205	188	177	167	254	233	219	205	
	55/45	136	121	112	103	137	122	113	103	138	123	113	104	169	150	138	126	
NP 1750	90/70	446	420	404	387	456	430	413	395	467	440	422	404	588	552	529	505	1450
	82/71	416	391	375	358	426	400	382	365	435	408	390	373	546	511	488	465	
	75/65	362	338	322	306	370	344	328	311	377	351	334	316	471	437	415	393	
	70/55	302	279	263	248	307	283	267	251	312	287	271	254	387	355	334	313	
	55/45	207	185	171	157	209	187	172	158	211	188	173	158	258	229	210	192	
NP 2250	90/70	599	565	543	520	614	578	555	532	629	592	567	543	791	743	711	679	1950
	82/71	560	526	504	482	572	537	514	491	585	549	525	501	735	687	656	625	
	75/65	487	454	433	412	497	463	441	419	507	472	449	426	633	588	558	528	
	70/55	406	375	354	333	413	380	359	338	420	386	364	342	521	478	449	421	
	55/45	278	249	230	211	281	251	231	212	283	253	232	213	347	308	283	258	
NP 2750	90/70	753	710	682	654	771	727	697	668	790	743	712	682	993	933	893	854	2450
	82/71	703	661	633	605	719	675	646	617	736	690	659	630	923	863	824	786	
	75/65	612	571	544	517	625	582	554	526	637	593	564	535	795	738	701	664	
	70/55	510	471	445	419	519	478	451	424	528	485	457	430	654	600	564	529	
	55/45	349	313	289	265	353	315	290	266	356	317	292	267	436	387	355	324	
NP 3250	90/70	907	855	821	787	929	875	839	804	951	895	858	821	1196	1123	1075	1028	2950
	82/71	847	796	762	729	866	813	778	743	886	830	794	758	1111	1040	993	946	
	75/65	737	688	655	623	752	701	667	633	767	714	679	644	958	889	844	799	
	70/55	615	567	535	504	625	575	543	511	635	584	550	517	788	723	680	637	
	55/45	421	377	348	319	425	379	350	321	429	382	352	322	525	466	428	390	
NP 3750	90/70	1060	1000	960	921	1086	1023	982	940	1112	1047	1003	960	1399	1314	1258	1202	3450
	82/71	990	931	891	852	1013	951	910	869	1036	971	929	887	1300	1216	1161	1107	
	75/65	862	804	766	728	879	819	780	741	897	835	794	753	1120	1040	987	935	
	70/55	719	663	626	590	731	673	635	598	743	683	644	605	922	845	795	745	
	55/45	492	440	406	373	497	444	409	375	501	447	411	376	614	545	500	456	
NP 4250	90/70	1214	1145	1099	1054	1243	1171	1124	1077	1273	1198	1149	1100	1602	1504	1440	1376	3950
	82/71	1134	1065	1020	976	1159	1088	1042	995	1186	1112	1063	1015	1488	1392	1329	1267	
	75/65	987	921	877	834	1007	938	893	848	1027	956	909	862	1282	1190	1130	1070	
	70/55	823	759	717	675	837	771	727	684	850	782	737	693	1055	967	910	853	
	55/45	563	504	465	427	569	508	468	429	574	512	471	431	703	624	573	522	
NP 4750	90/70	1368	1290	1239	1188	1401	1320	1266	1213	1435	1350	1294	1239	1804	1694	1622	1551	4450
	82/71	1277	1200	1150	1099	1306	1226	1174	1121	1336	1253	1198	1144	1676	1568	1497	1427	
	75/65	1112	1037	988	939	1134	1057	1006	955	1157	1076	1024	971	1445	1341	1273	1205	
	70/55	927	855	808	761	943	868	819	771	958	881	830	780	1189	1090	1025	962	
	55/45	635	568	524	481	641	572	528	484	647	576	530	485	792	703	645	588	
NP 5000	90/70	1445	1362	1308	1254	1479	1394	1337	1281	1515	1426	1367	1308	1906	1790	1713	1638	4700
	82/71	1349	1268	1214	1161	1380	1295	1239	1184	1411	1323	1265	1208	1770	1656	1582	1508	
	75/65	1174	1095	1043	992	1198	1116	1062	1009	1222	1137	1081	1026	1526	1416	1344	1273	
	70/55	979	903	853	803	996	917	865	814	1012	930	877	824	1256	1151	1083	1016	
	55/45	670	600	554	508	677	605	557	511	683	609	560	513	836	742	681	621	
Heat output per m finned convector non-stand. (MP) range (w/m)	90/70	307	290	278	267	315	297	285	273	322	303	291	278	405	381	365	348	1000
	82/71	287	270	258	247	294	276	264	252	300	281	269	257	377	352	337	321	
	75/65	250	233	222	211	255	237	226	215	260	242	230	218	325	301	286	271	
	70/55	208	192	181	171	212	195	184	173	215	198	187	175	267	245	230	216	
	55/45	143	128	118	108	144	129	119	109	145	130	119	109	178	158	145	132	

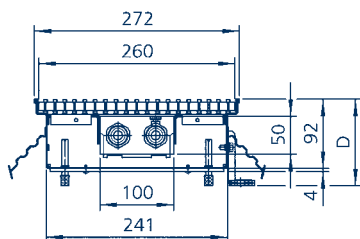
*Please state type number when ordering (see p 4)

The standard heat outputs at LPHW 75/65 °C, room temperature 20 °C are shown in bold

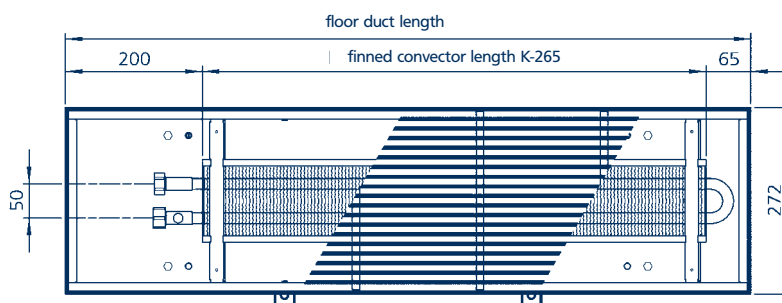
1.45 Katherm NK - Natural convection

Technical data

Katherm NK 272 dimensions

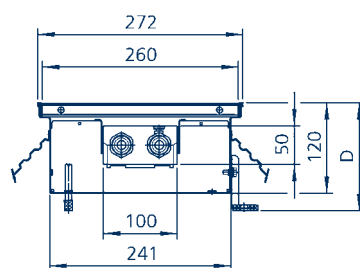


cross-section through 92mm deep duct - unit shown with raised floor height adjustment feet and linear grille

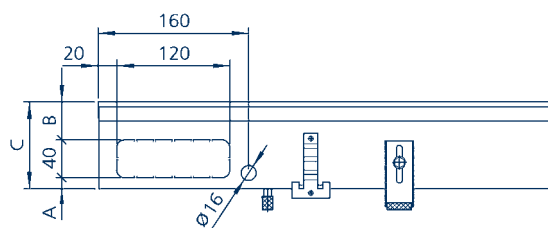


plan view - unit shown with linear grille

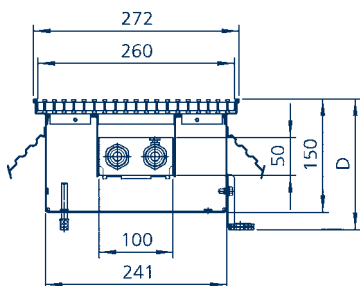
non-standard (MP) Katherm NK 272 can be manufactured in any length up to a single unit length of 5000 mm.



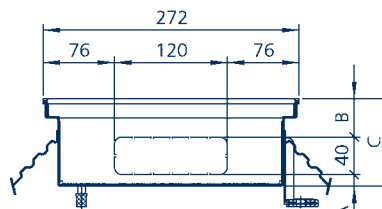
cross-section through 120mm deep duct - unit shown with roll-up grille



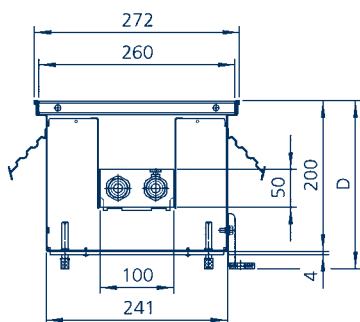
side view of 92mm deep duct showing stamped pipe opening



cross-section through 150mm deep duct - unit shown with linear grille



end view of 92mm deep duct showing stamped pipe opening



cross-section through 200mm deep duct - unit shown with raised floor height adjustment feet and roll-up grille

Katherm NK 272 dimensions

Overall frame width	[mm]	272			
Duct width	[mm]	241			
Grille width	[mm]	260			
Duct length	[mm]	850-5000 (please state when ordering)			
Convector height	[mm]	50			
Convector depth	[mm]	100			
Finned convector length	[mm]	K - 265			
Connection, Eurokonus		same end, left or right			
	A [mm]	12	30	50	60
	B [mm]	40	50	60	100
Duct height	C [mm]	92	120	150	200
Max. adjustment height	D [mm]	129	157	187	237

Katherm NK 272 heat outputs

Katherm NK 272 heat outputs (w)																		
Duct height [mm]		92				120				150				200				Finned convector length [mm]
Duct length K [mm] NP= standard range*	Water temp. LPHW [°C]	Heat output Q [w] at room temperature t _r																
		15 °C	18 °C	20 °C	22 °C	15 °C	18 °C	20 °C	22 °C	15 °C	18 °C	20 °C	22 °C	15 °C	18 °C	20 °C	22 °C	
NP 850	90/70	250	236	227	218	287	271	259	249	323	303	291	278	369	347	332	317	585
	82/71	234	220	211	202	268	251	240	230	300	281	268	256	343	321	306	292	
	75/65	204	191	182	173	232	216	206	196	259	240	228	216	296	274	260	247	
	70/55	171	158	149	141	193	178	168	158	213	195	184	173	243	223	210	197	
	55/45	118	106	98	90	131	117	108	99	142	126	116	106	162	144	132	120	
NP 1250	90/70	421	398	382	367	484	455	437	419	544	511	489	468	622	584	559	534	985
	82/71	394	371	355	340	451	423	405	387	505	473	452	431	577	540	516	492	
	75/65	344	321	306	292	391	364	347	329	436	405	384	364	498	462	438	415	
	70/55	288	266	251	237	325	299	282	265	359	329	310	291	409	375	353	331	
	55/45	199	178	165	151	221	197	181	166	239	213	195	178	273	242	222	203	
NP 1750	90/70	635	600	576	553	729	687	659	631	820	770	737	705	937	880	842	805	1485
	82/71	594	559	536	513	680	638	610	583	762	713	681	649	871	814	778	741	
	75/65	519	484	462	439	590	549	523	496	657	610	579	549	750	696	661	626	
	70/55	434	401	379	358	490	451	425	400	541	496	467	438	617	566	532	499	
	55/45	299	269	248	228	332	297	273	251	361	321	294	269	411	365	335	305	
NP 2250	90/70	849	802	770	739	975	918	881	843	1096	1030	986	942	1253	1176	1126	1076	1985
	82/71	794	747	716	685	909	853	816	779	1019	953	910	868	1164	1089	1039	991	
	75/65	693	647	617	587	789	734	699	663	878	815	774	733	1003	931	883	837	
	70/55	580	536	507	478	655	603	569	535	723	663	624	586	825	756	711	667	
	55/45	400	359	332	305	444	397	366	335	483	428	393	359	549	488	447	408	
NP 2750	90/70	1063	1004	965	926	1220	1149	1102	1056	1372	1289	1234	1180	1568	1473	1410	1347	2485
	82/71	994	935	897	858	1137	1067	1021	976	1275	1193	1140	1086	1457	1363	1301	1240	
	75/65	868	811	773	735	987	919	875	831	1100	1021	969	918	1255	1165	1106	1047	
	70/55	726	671	634	598	820	755	712	670	905	830	781	733	1033	947	891	835	
	55/45	501	449	415	382	556	497	458	419	604	536	492	449	688	610	560	511	
NP 3250	90/70	1277	1206	1159	1112	1466	1380	1324	1268	1648	1548	1482	1417	1884	1769	1693	1619	2985
	82/71	1194	1123	1077	1031	1366	1282	1227	1172	1532	1433	1369	1305	1750	1637	1563	1490	
	75/65	1042	974	928	883	1186	1104	1051	998	1321	1226	1164	1103	1508	1400	1328	1258	
	70/55	872	806	762	719	985	906	855	804	1088	998	939	880	1241	1137	1070	1003	
	55/45	602	540	499	459	668	597	550	504	726	644	592	540	826	733	673	614	
NP 3750	90/70	1491	1408	1353	1298	1711	1612	1546	1481	1924	1808	1731	1655	2199	2065	1977	1890	3485
	82/71	1394	1312	1257	1203	1595	1497	1432	1368	1788	1674	1598	1524	2043	1911	1825	1739	
	75/65	1217	1137	1084	1031	1384	1289	1227	1165	1542	1432	1359	1288	1761	1634	1551	1469	
	70/55	1018	941	890	839	1149	1058	998	939	1270	1165	1096	1028	1448	1328	1249	1171	
	55/45	703	630	583	536	780	696	642	588	847	752	691	630	965	856	786	717	
NP 4250	90/70	1705	1610	1547	1484	1957	1843	1768	1693	2200	2067	1979	1892	2515	2361	2260	2161	3985
	82/71	1594	1500	1438	1376	1824	1712	1638	1565	2045	1914	1827	1742	2336	2186	2087	1989	
	75/65	1392	1300	1239	1179	1583	1474	1403	1332	1763	1637	1554	1472	2013	1868	1773	1680	
	70/55	1164	1076	1017	959	1314	1210	1141	1074	1452	1332	1253	1175	1656	1518	1428	1340	
	55/45	803	721	666	613	892	796	734	672	969	860	790	721	1103	979	898	820	
NP 4750	90/70	1919	1812	1741	1671	2202	2074	1989	1906	2477	2326	2227	2129	2830	2658	2544	2432	4485
	82/71	1794	1688	1618	1549	2053	1927	1843	1761	2301	2154	2057	1961	2629	2460	2348	2238	
	75/65	1566	1463	1395	1327	1782	1659	1579	1499	1985	1842	1749	1657	2266	2103	1996	1890	
	70/55	1311	1211	1145	1080	1479	1362	1285	1208	1634	1499	1410	1323	1864	1709	1608	1508	
	55/45	904	811	750	689	1004	896	826	757	1090	968	889	811	1241	1102	1011	922	
NP 5000	90/70	2026	1913	1838	1764	2325	2190	2100	2012	2615	2456	2351	2248	2988	2806	2686	2567	4735
	82/71	1894	1782	1708	1635	2167	2034	1946	1859	2430	2274	2171	2070	2776	2597	2479	2363	
	75/65	1653	1544	1473	1401	1881	1752	1667	1583	2095	1945	1847	1749	2392	2220	2107	1996	
	70/55	1384	1278	1209	1140	1562	1438	1356	1276	1725	1582	1489	1397	1968	1804	1697	1592	
	55/45	955	856	792	728	1060	946	872	799	1151	1022	938	856	1311	1163	1067	974	
Heat output per m finned convector Non-stand. (MP) range (w/m)	90/70	428	404	388	372	491	462	444	425	552	519	497	475	631	593	567	542	1000
	82/71	400	376	361	345	458	430	411	393	513	480	459	437	586	548	524	499	
	75/65	349	326	311	296	397	370	352	334	443	411	390	369	505	469	445	421	
	70/55	292	270	255	241	330	304	286	269	364	334	314	295	416	381	358	336	
	55/45	202	181	167	154	224	200	184	169	243	216	198	181	277	246	225	206	

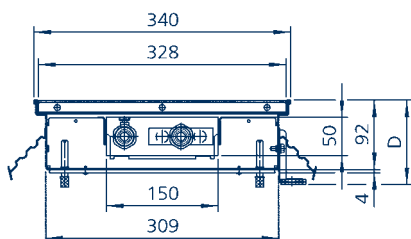
*Please state type number when ordering (see p 4)

The standard heat outputs at LPHW 75/65 °C, room temperature 20 °C are shown in bold

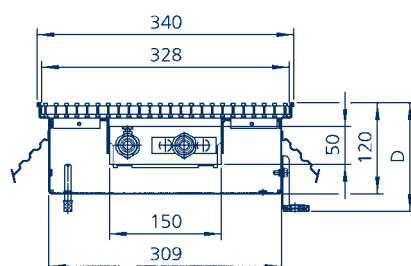
1.45 Katherm NK - Natural convection

Technical data

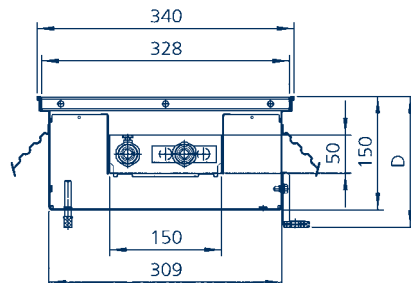
Katherm NK 340 dimensions



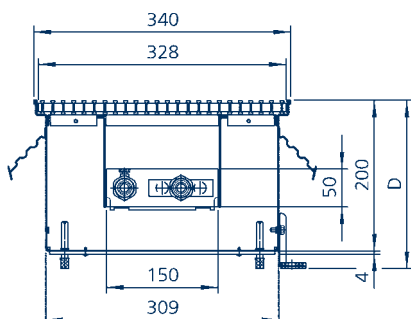
cross-section through 92mm deep duct - unit shown with raised floor height adjustment feet and roll-up grille



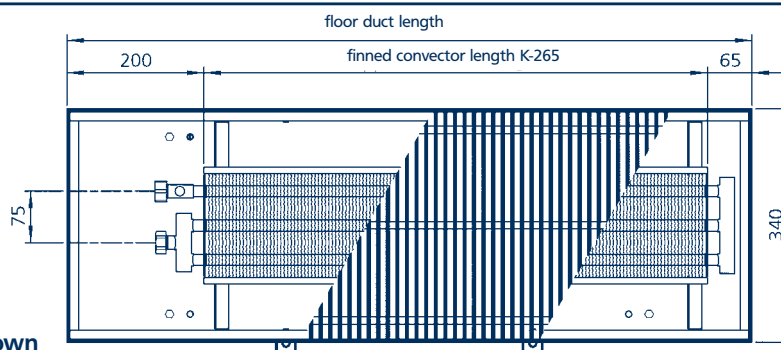
cross-section through 120mm deep duct - unit shown with linear grille



cross-section through 150mm deep duct - unit shown with roll-up grille

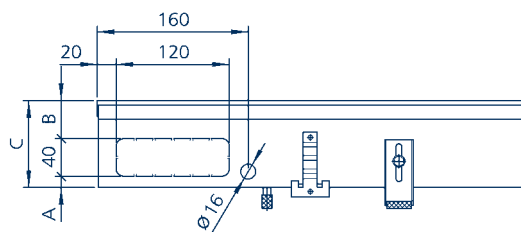


cross-section through 200mm deep duct - unit shown with raised floor height adjustment feet and linear grille

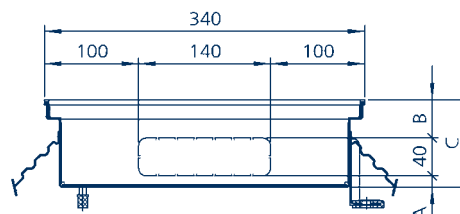


plan view - unit shown with roll-up grille

non-standard (MP) Katherm NK 340 can be manufactured in any length up to a single unit length of 5000 mm.



side view of 92mm deep duct - unit shown with stamped pipe opening



end view of 92mm deep duct showing stamped pipe opening

Katherm NK 340 dimensions

Overall frame width	[mm]	340			
Duct width	[mm]	309			
Grille width	[mm]	328			
Duct length	[mm]	850-5000 (please state when ordering)			
Convector height	[mm]	50			
Convector depth	[mm]	150			
Finned convector length	[mm]	K - 265			
Connection, Eurokonus		1/2", same end, left or right			
	A [mm]	12	30	50	60
	B [mm]	40	50	60	100
Duct height	C [mm]	92	120	150	200
Max. adjustment height	D [mm]	129	157	187	237

Katherm NK 340 heat outputs

Katherm NK 340 heat outputs																		
Duct height [mm]		92				120				150				200				Finned convector length [mm]
Duct length K [mm] NP= standard range*	Water temp. LPHW [°C]	Heat output Q [w] at room temperature t _r																
		15 °C	18 °C	20 °C	22 °C	15 °C	18 °C	20 °C	22 °C	15 °C	18 °C	20 °C	22 °C	15 °C	18 °C	20 °C	22 °C	
NP 850	90/70	339	320	307	294	388	365	350	335	434	408	391	373	494	464	445	426	585
	82/71	316	297	285	272	361	339	324	309	404	378	361	344	459	430	411	392	
	75/65	275	257	245	232	313	291	277	263	348	323	307	290	397	369	350	332	
	70/55	229	212	200	188	259	238	225	211	286	263	247	232	328	301	283	266	
	55/45	157	140	129	119	175	156	144	131	191	169	156	142	220	195	180	164	
NP 1250	90/70	571	538	517	495	653	614	589	564	731	687	658	629	832	782	749	717	985
	82/71	533	501	479	458	608	570	545	520	680	636	607	579	774	725	692	660	
	75/65	464	432	412	391	527	490	466	442	586	544	516	489	668	621	590	559	
	70/55	386	356	336	317	436	401	378	355	482	442	416	390	552	507	477	448	
	55/45	264	236	218	200	295	263	242	221	321	285	262	239	370	329	302	276	
NP 1750	90/70	861	811	779	747	984	926	888	850	1103	1036	991	948	1254	1179	1129	1080	1485
	82/71	803	755	723	691	917	859	822	785	1024	959	915	873	1166	1092	1044	996	
	75/65	699	652	621	590	794	739	702	666	883	820	778	737	1008	936	890	843	
	70/55	582	537	507	477	658	605	570	536	727	667	627	588	832	764	719	675	
	55/45	398	356	329	302	444	396	364	333	484	430	395	360	558	496	456	416	
NP 2250	90/70	1150	1085	1041	998	1315	1238	1187	1136	1474	1384	1325	1267	1676	1576	1509	1444	1985
	82/71	1074	1009	966	924	1225	1149	1099	1049	1369	1281	1224	1166	1559	1460	1395	1331	
	75/65	934	871	830	789	1061	987	939	891	1181	1096	1040	985	1347	1252	1189	1127	
	70/55	778	718	678	638	879	808	762	716	972	891	838	786	1112	1021	961	902	
	55/45	532	476	439	403	594	529	487	446	648	575	528	481	745	663	609	557	
NP 2750	90/70	1440	1358	1303	1250	1647	1550	1486	1422	1845	1733	1659	1586	2098	1973	1890	1808	2485
	82/71	1344	1263	1209	1156	1534	1438	1375	1313	1714	1604	1532	1460	1952	1828	1747	1666	
	75/65	1170	1091	1039	987	1329	1236	1175	1115	1478	1372	1302	1233	1686	1567	1489	1411	
	70/55	974	898	848	799	1100	1012	954	897	1216	1115	1049	984	1392	1278	1203	1130	
	55/45	666	596	550	505	743	662	610	558	811	720	661	603	933	830	763	697	
NP 3250	90/70	1730	1631	1566	1501	1978	1862	1785	1709	2216	2082	1993	1905	2521	2369	2270	2171	2985
	82/71	1615	1517	1453	1389	1842	1728	1652	1577	2059	1927	1840	1754	2344	2196	2098	2002	
	75/65	1405	1310	1248	1186	1596	1485	1412	1340	1775	1648	1564	1482	2026	1882	1788	1695	
	70/55	1171	1079	1019	960	1322	1215	1146	1077	1461	1340	1260	1182	1672	1535	1445	1357	
	55/45	800	716	661	606	893	796	732	670	974	865	794	724	1121	997	916	837	
NP 3750	90/70	2020	1904	1828	1752	2310	2173	2084	1995	2588	2430	2327	2224	2943	2766	2650	2535	3485
	82/71	1885	1771	1696	1622	2151	2017	1929	1842	2404	2250	2148	2048	2737	2564	2450	2337	
	75/65	1640	1530	1457	1385	1863	1734	1648	1564	2073	1924	1826	1730	2365	2197	2088	1979	
	70/55	1367	1260	1190	1121	1543	1419	1338	1257	1706	1564	1472	1380	1952	1792	1688	1584	
	55/45	934	836	771	708	1042	929	855	782	1137	1009	926	845	1309	1164	1070	977	
NP 4250	90/70	2309	2177	2090	2004	2641	2485	2383	2281	2959	2779	2660	2543	3365	3163	3030	2899	3985
	82/71	2155	2025	1940	1854	2460	2306	2206	2106	2749	2572	2456	2341	3130	2932	2801	2672	
	75/65	1876	1749	1666	1583	2131	1982	1885	1789	2370	2200	2088	1978	2704	2513	2387	2263	
	70/55	1563	1441	1361	1281	1765	1623	1530	1438	1951	1789	1683	1578	2232	2049	1930	1812	
	55/45	1068	956	882	809	1192	1062	978	895	1300	1154	1059	967	1497	1331	1223	1118	
NP 4750	90/70	2599	2451	2352	2255	2972	2797	2682	2567	3330	3128	2994	2862	3787	3560	3411	3263	4485
	82/71	2426	2279	2183	2087	2768	2596	2482	2370	3094	2895	2764	2635	3523	3299	3153	3007	
	75/65	2111	1969	1875	1782	2398	2231	2121	2013	2667	2476	2350	2226	3043	2828	2687	2547	
	70/55	1759	1622	1531	1442	1986	1826	1721	1618	2195	2013	1894	1776	2512	2306	2172	2039	
	55/45	1202	1076	992	911	1341	1195	1100	1007	1463	1299	1192	1088	1684	1498	1377	1258	
NP 5000	90/70	2744	2587	2484	2381	3138	2953	2831	2710	3516	3302	3161	3022	3998	3759	3601	3444	4735
	82/71	2561	2407	2305	2203	2922	2740	2621	2502	3267	3057	2919	2782	3719	3483	3328	3175	
	75/65	2229	2078	1979	1881	2532	2355	2240	2125	2816	2614	2481	2350	3213	2986	2836	2689	
	70/55	1857	1712	1617	1522	2097	1928	1817	1708	2318	2125	1999	1875	2652	2435	2293	2153	
	55/45	1269	1135	1048	962	1416	1262	1161	1063	1545	1371	1259	1148	1778	1581	1453	1328	
Heat output per m finned convector Non-stand. (MP) range (w/m)	90/70	579	546	525	503	663	624	598	572	743	697	668	638	844	794	760	727	1000
	82/71	541	508	487	465	617	579	553	528	690	646	616	588	785	736	703	671	
	75/65	471	439	418	397	535	497	473	449	595	552	524	496	679	631	599	568	
	70/55	392	362	341	322	443	407	384	361	489	449	422	396	560	514	484	455	
	55/45	268	240	221	203	299	267	245	224	326	290	266	243	376	334	307	280	

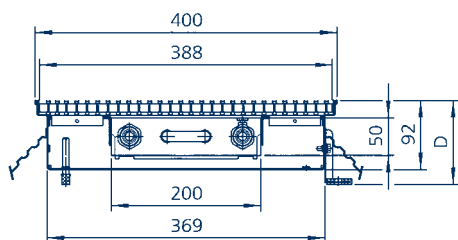
*Please state type number when ordering (see p 4)

The standard heat outputs at LPHW 75/65 °C, room temperature 20 °C are shown in bold

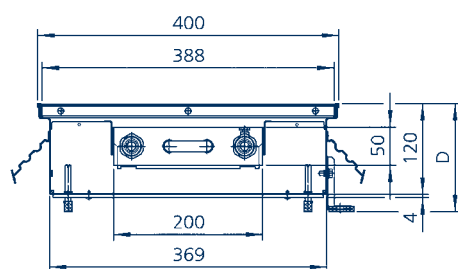
1.45 Katherm NK - Natural convection

Technical data

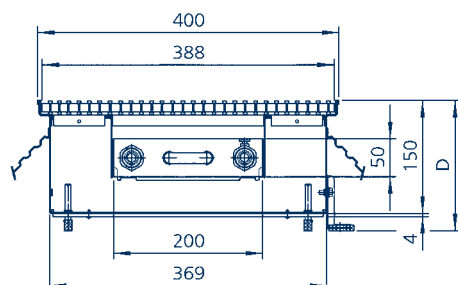
Katherm NK 400 dimensions



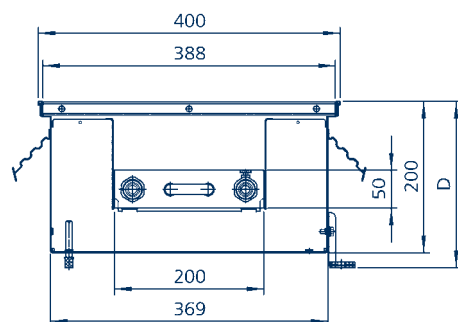
cross-section through 92mm deep duct, shown with linear grille



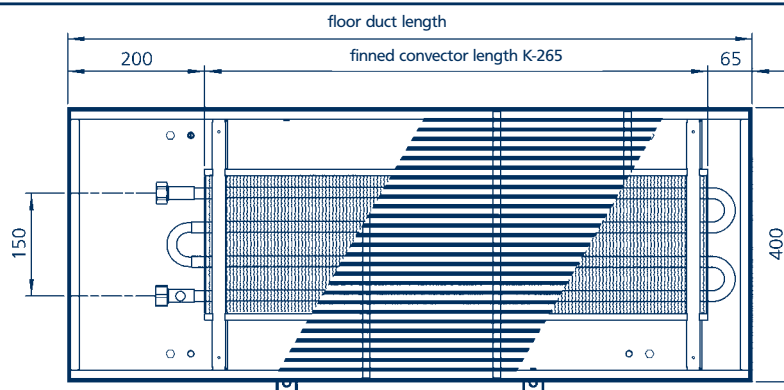
cross-section through 120mm deep duct - unit shown with raised floor height adjustment feet and roll-up grille



cross-section through 150mm deep duct - unit shown with raised floor height adjustment feet and linear grille

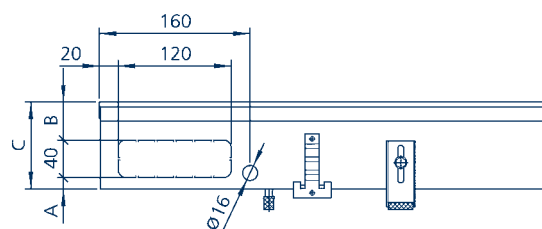


cross-section through 200mm deep duct - unit shown with roll-up grille

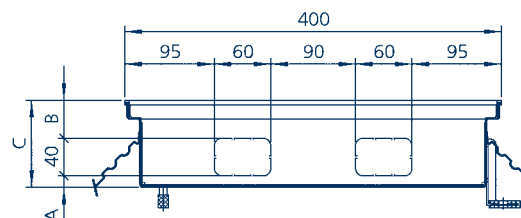


plan view - unit shown with linear grille

non-standard (MP) Katherm NK 400 can be manufactured in any length up to a single unit length of 5000 mm.



side view through 92mm deep duct showing pipe opening



end view of 92mm deep duct showing stamped pipe opening

Katherm NK 400 dimensions

Overall frame width	[mm]	400			
Duct width	[mm]	369			
Grille width	[mm]	388			
Duct length	[mm]	850-5000 (please state when ordering)			
Convector height	[mm]	50			
Convector depth	[mm]	200			
Finned convector length	[mm]	K - 265			
Connection, Eurokonus		1/2", same end, left or right			
	A [mm]	12	30	50	60
	B [mm]	40	50	60	100
Duct height	C [mm]	92	120	150	200
Max. adjustment height	D [mm]	129	157	187	237

Katherm NK 400 heat outputs

Katherm NK 400 heat outputs																		
Duct height [mm]		92				120				150				200				Finned convector length [mm]
Duct length K [mm] NP= standard range*	Water temp. LPHW [°C]	Heat output Q [w] at room temperature t _r																
		15 °C	18 °C	20 °C	22 °C	15 °C	18 °C	20 °C	22 °C	15 °C	18 °C	20 °C	22 °C	15 °C	18 °C	20 °C	22 °C	
NP 850	90/70	422	398	381	365	478	450	432	414	531	500	479	459	608	572	548	525	585
	82/71	394	369	353	337	446	418	400	382	494	464	443	423	566	531	507	484	
	75/65	341	318	302	287	387	360	342	325	428	399	379	360	490	456	433	411	
	70/55	283	261	246	231	321	295	278	261	355	326	308	289	406	373	352	330	
	55/45	192	171	158	145	217	194	178	163	240	214	197	180	274	244	224	205	
NP 1250	90/70	711	669	642	615	806	758	727	696	894	841	806	772	1024	963	923	884	985
	82/71	663	622	595	568	751	704	674	643	832	781	747	713	953	894	854	816	
	75/65	575	535	509	483	651	606	576	547	721	671	638	606	825	768	730	692	
	70/55	477	439	414	390	540	497	468	440	598	550	518	487	683	628	592	556	
	55/45	324	289	266	244	365	326	300	275	404	360	331	303	461	411	378	346	
NP 1750	90/70	1072	1009	968	927	1214	1143	1096	1050	1347	1268	1216	1164	1543	1452	1392	1332	1485
	82/71	999	937	897	857	1132	1062	1015	970	1255	1177	1126	1075	1437	1347	1288	1230	
	75/65	867	807	768	729	981	913	869	825	1087	1012	962	913	1244	1157	1100	1044	
	70/55	719	662	624	587	814	749	706	664	901	829	781	734	1030	947	892	839	
	55/45	488	435	401	367	551	491	452	414	609	543	500	457	695	619	570	521	
NP 2250	90/70	1433	1349	1294	1239	1623	1528	1466	1404	1801	1695	1625	1556	2063	1941	1861	1781	1985
	82/71	1335	1253	1199	1145	1513	1419	1357	1296	1678	1573	1505	1437	1921	1801	1722	1644	
	75/65	1158	1079	1026	974	1312	1221	1161	1102	1454	1353	1286	1221	1663	1547	1471	1395	
	70/55	961	885	835	785	1088	1001	944	887	1204	1108	1044	982	1377	1266	1193	1121	
	55/45	652	582	536	491	736	657	605	554	814	726	668	611	929	827	761	697	
NP 2750	90/70	1793	1689	1620	1552	2032	1913	1835	1757	2255	2122	2035	1948	2582	2430	2329	2230	2485
	82/71	1672	1569	1501	1434	1894	1776	1699	1623	2100	1970	1884	1799	2405	2254	2156	2058	
	75/65	1450	1350	1285	1220	1642	1528	1454	1380	1820	1693	1610	1528	2082	1937	1841	1747	
	70/55	1204	1108	1045	983	1362	1253	1181	1111	1508	1387	1307	1229	1724	1585	1493	1403	
	55/45	816	728	671	615	922	822	757	693	1019	908	836	765	1163	1036	953	872	
NP 3250	90/70	2154	2029	1946	1864	2441	2298	2204	2111	2708	2549	2444	2340	3102	2919	2798	2678	2985
	82/71	2008	1884	1803	1722	2275	2134	2041	1949	2523	2366	2263	2160	2888	2708	2589	2472	
	75/65	1742	1622	1543	1465	1972	1836	1746	1658	2186	2034	1934	1836	2501	2327	2212	2098	
	70/55	1446	1331	1255	1181	1636	1505	1419	1334	1811	1666	1570	1476	2070	1903	1794	1686	
	55/45	981	875	806	738	1107	988	909	833	1224	1091	1004	919	1397	1244	1145	1047	
NP 3750	90/70	2515	2368	2272	2176	2850	2683	2573	2464	3162	2976	2853	2732	3622	3408	3267	3127	3485
	82/71	2344	2200	2105	2010	2656	2491	2383	2276	2945	2762	2642	2522	3372	3162	3023	2886	
	75/65	2034	1894	1802	1711	2303	2143	2039	1935	2552	2375	2258	2143	2920	2716	2582	2450	
	70/55	1688	1554	1465	1378	1909	1757	1657	1558	2114	1945	1833	1723	2417	2222	2094	1968	
	55/45	1145	1022	941	862	1293	1153	1062	972	1429	1274	1173	1073	1631	1453	1337	1223	
NP 4250	90/70	2876	2708	2598	2488	3259	3068	2942	2818	3616	3403	3263	3124	4141	3897	3735	3576	3985
	82/71	2681	2515	2407	2299	3037	2849	2725	2602	3368	3159	3021	2884	3856	3615	3457	3300	
	75/65	2326	2166	2060	1956	2633	2451	2331	2213	2918	2716	2582	2451	3339	3106	2953	2802	
	70/55	1930	1777	1676	1576	2183	2009	1894	1781	2418	2224	2096	1971	2764	2541	2395	2250	
	55/45	1309	1168	1076	986	1478	1318	1214	1112	1634	1457	1341	1227	1865	1661	1528	1398	
NP 4750	90/70	3237	3048	2924	2800	3668	3453	3312	3171	4069	3830	3672	3516	4661	4385	4204	4024	4485
	82/71	3017	2831	2709	2587	3418	3206	3067	2929	3790	3555	3400	3246	4340	4069	3890	3714	
	75/65	2617	2437	2319	2201	2963	2758	2624	2490	3284	3056	2906	2758	3758	3496	3323	3153	
	70/55	2172	1999	1886	1774	2457	2261	2132	2005	2721	2503	2359	2218	3111	2860	2695	2533	
	55/45	1473	1315	1211	1109	1664	1484	1367	1251	1839	1639	1509	1381	2098	1870	1720	1574	
NP 5000	90/70	3417	3218	3087	2956	3872	3646	3496	3348	4296	4043	3877	3712	4921	4630	4438	4248	4735
	82/71	3185	2989	2860	2731	3608	3385	3238	3092	4002	3753	3589	3427	4582	4296	4107	3921	
	75/65	2763	2573	2448	2324	3128	2912	2770	2629	3467	3227	3068	2912	3967	3691	3509	3329	
	70/55	2293	2111	1991	1873	2594	2387	2251	2116	2873	2642	2491	2341	3284	3019	2845	2674	
	55/45	1555	1388	1279	1171	1757	1567	1443	1321	1942	1731	1593	1458	2215	1974	1816	1662	
Heat output per m finned convector Non-stand. (MP) range (w/m)	90/70	722	680	652	624	818	770	738	707	907	854	819	784	1039	978	937	897	1000
	82/71	673	631	604	577	762	715	684	653	845	793	758	724	968	907	867	828	
	75/65	584	543	517	491	661	615	585	555	732	681	648	615	838	779	741	703	
	70/55	484	446	420	395	548	504	475	447	607	558	526	494	694	638	601	565	
	55/45	329	293	270	247	371	331	305	279	410	366	336	308	468	417	384	351	

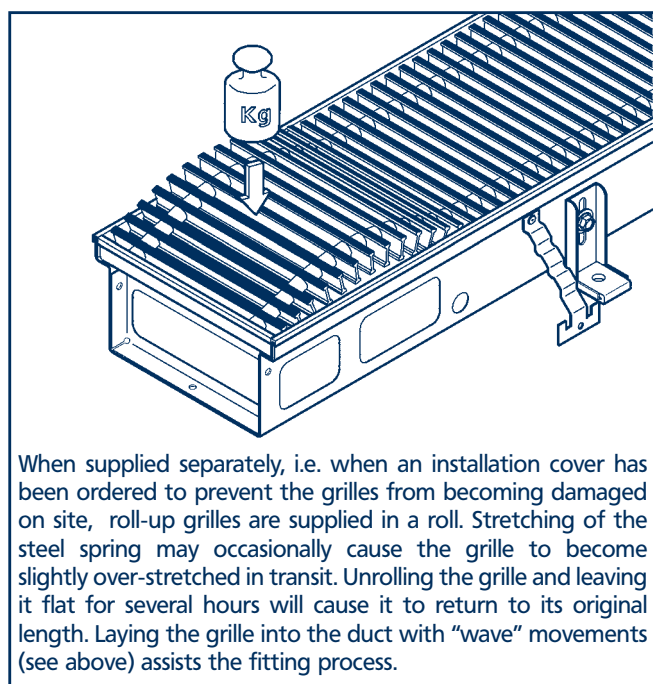
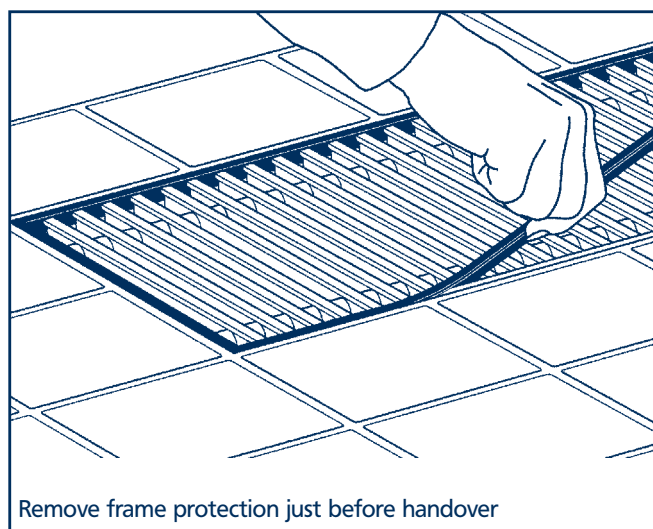
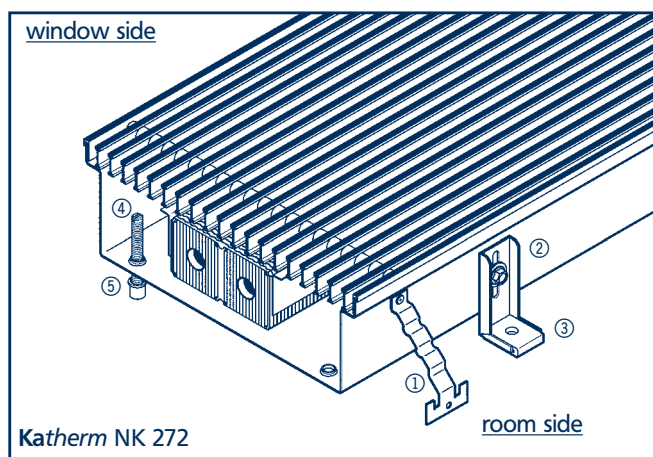
*Please state type number when ordering (see p 4)

The standard heat outputs at LPHW 75/65 °C, room temperature 20 °C are shown in bold

1.45 Katherm NK - Natural convection

Technical data

Installation



1. Delivery

Floor duct heaters are supplied as standard with:

- screed anchoring lugs ①
- mounting feet on the room side, ② with rubber underlay to provide sound absorption ③ (in screed); screw fix on site
- height adjustment screws on the window side, ④ with sound insulation on the feet ⑤
- accessories: raised floor height adjustment feet (see p25 for fitting instructions)

2. Positioning/Pipework

- Remove external packaging and cardboard from floor duct.
- Level floor duct and fix on mounting feet and adjustment screws.
- Tighten mounting feet on room side ②.
- Select room-, window-side or end panel pipe entry. Remove stamped pipe opening and fit and seal thermostatic valve head and valve body.
- Connect up flow and return pipework.
- Carry out pressure test.
- Retain installation manual
- Protect grille and duct from becoming damaged with cement or similar on site.

3. Thermostatic valve head · Thermoelectric actuator

Lay a Ø 23 mm pipe for the capillary tube to the thermostatic valve head or for the connecting cable to the thermoelectric actuator.

4. Screeding

Before screeding, check that

- the water connections are tight,
- all electrical work has been carried out correctly,
- the floor duct is correctly positioned both in height and distance from the window,
- the grille is covered (**IMPORTANT - cement can seriously damage the surface of the grille!**),
- the screed anchoring lugs are splayed out (projecting into the screed),
- the insulation has been fixed to the underside of the floor duct heater (not necessary with raised floors),
- there are no sound bridges to the slab, especially around the mounting feet,
- the pipe for the thermostatic valve has been laid,
- all openings in the floor duct have been sealed with a suitable material against the ingress of screed.

Important!

- the floor duct must not be allowed to become compressed by the screed or the floor. If concerned, insert expansion joints

Fitting of raised floor height adjustment feet

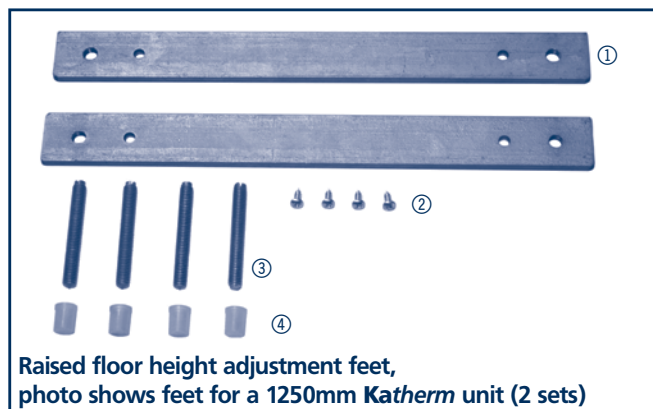
5. Fitting of raised floor height adjustment feet

Each set comprises

- 1 x metal bar ①
- 2 x screws ②
- 2 x M8 adjustment screws M8 ③ with sound insulation ④

The number of height adjustment feet supplied depends on the length of **Katherm NK** supplied.

To prevent scratches or damage to the **Katherm NK** or grille, we recommend placing it on cardboard during fitting of the height adjustment feet.



Removal of screw opening (photo A)

- Remove grille

Important!

When turning the floor duct on its side, ensure that the heat exchanger and duct edge do not become damaged. Lay the duct on cardboard and ensure that the heat exchanger does not fall out of place.

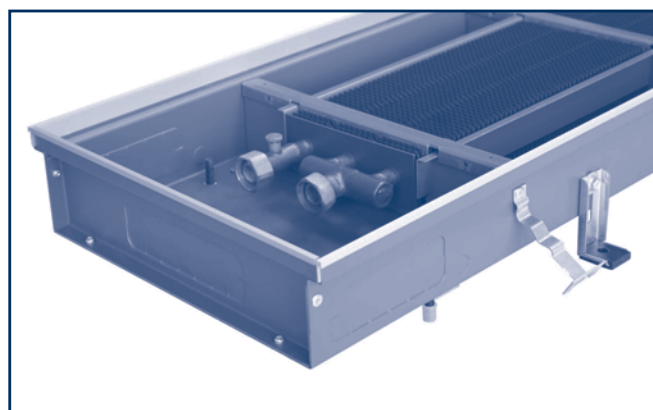
- Tip the **Katherm NK** onto its edge.
- Pierce the base of the duct as shown.

Fitting steel bar (photo B)

- Fix the steel bar to the base of the duct using the 2 screws
- Screw the 2 adjustment screws into the steel bar (slot facing outwards)
- Apply sound insulation to base of screw

Height adjustment (photo C)

- Turn **Katherm NK** upright again.
- Adjust the height of the adjustment screws using a screwdriver.



1.45 Katherm NK - Natural convection

Specifications

Katherm NK 182, Katherm NK 272, Katherm NK 340, Katherm NK 400,

Qty.	Article no.	Description	Price/each	Total price
pc.	145 0 2 09 1 11 12	Katherm NK floor duct heaters ready-to-install natural convection floor duct convectors, manufactured from: sendzimir galvanized steel duct, painted graphite grey, with screed anchoring lugs for use with screeded floors, internal and lateral height adjustment feet; copper/aluminium convector with Eurokonus valve fitting, painted graphite grey, suitable for max. operating pressure 10 bar and 120 °C, sitting on steel brackets with felt underlay, with duct reinforcing bracketry; grille frame to match double T-profile grille; grille bar dimension 18 x 5 mm, bar spacing 9 mm; linked on corrosion-proof steel spring with matching spacers; approx. 65% free area; heat output tested in accordance with EN 442, registered with DIN CERTCO and monitored under registration no. 6R 1068 complete with: 1 roll-up grille 3 linear grille 11 aluminium, natural anodized 12 aluminium, brass anodized 13 aluminium, bronze anodized 14 aluminium, black anodized 15 aluminium, bronze effect 16 aluminium, painted basalt grey, DB 703 31 stainless steel 32 stainless steel, polished 33 natural brass, CuZn 44 34 natural brass, CuZn 44, polished, oxydation-proof 2 Katherm NK 182 width 182 mm connection 1/2" same end 4 Katherm NK 272 width 272 mm connection 1/2" same end 6 Katherm NK 340 width 340 mm connection 1/2" same end 8 Katherm NK 400 width 400 mm connection 1/2" same end 09 duct height 92 mm 12 duct height 120 mm 15 duct height 150 mm 20 duct height 200 mm Length key: 12 NP 850 mm 20 NP 1250 mm 30 NP 1750 mm 40 NP 2250 mm 50 NP 2750 mm 60 NP 3250 mm 70 NP 3750 mm 80 NP 4250 mm 90 NP 4750 mm 95 NP 5000 mm Technical data: Duct length NP _____ mm (standard range) MP _____ mm (non-standard range) Heating medium LPHW _____ / _____ °C Room temperature _____ °C Heat output _____ W Type Kampmann, article no. 1450_ _ _ _ _ type _ _ _ _ _		

required to
complete
DataNorm/EDV
article no.

for DataNorm/EDV entry,
use article no.

Qty.	Article no.	Description	Price/each	Total price
pc.	194 000 2 4 6 9 0 9	1/2" Valve body, axial design for Katherm NK 182 Type Kampmann, article no. 194000246909, type 246909		
pc.	194 000 1 4 6 9 0 9	1/2" Valve body, straight design, for Katherm NK 272, NK 340 and NK 400 Type Kampmann, article no. 194000146909, type 146909		
pc.	194 000 1 4 5 9 5 2	1/2" Return shut-off valve, straight design, nickel-plate housing, o-ring seal Type Kampmann, article no. 194000145952, type 145952		
pc.	194 000 1 4 5 9 5 3	1/2" Return shut-off valve, angled design nickel-plate housing, o-ring seal Type Kampmann, article no. 194000145953, type 145953		
pc.	194 000 1 4 6 9 0 5	Thermoelectric actuator 230 V, 50 Hz Type Kampmann, article no. 194000146905, type 146905		
pc.	194 000 1 4 6 9 0 7	Thermostatic valve head with remote sensor white, surface-mounted, with 5 m capillary tube; temperature range 8-27 °C, frost protection +6 °C Type Kampmann, article no. 194000146907, type 146907		
pc.	194 000 1 4 5 9 7 0	Surcharge for mitred corners individual bars are cut on the mitre and joined; duct sections are slip-jointed; convectors are connected using woven steel flexible connections; manufactured to exact dimensions		
		0 1 3 2 7 8 1 2		
		for Katherm NK 182 for Katherm NK 272 for Katherm NK 340 for Katherm NK 400 non-90 degree angle 90° angle for Katherm NK with roll-up grille for Katherm NK with linear grille Type Kampmann, article no. 194000_459_ _ type _459_ _		
m	194 000 1 4 6 9 8 4	Installation cover to protect floor duct on site during installation for Katherm NK 182 for Katherm NK 272 for Katherm NK 340 for Katherm NK 400 Type Kampmann, article no. 19400014698_ _ type 14698_ _		
		4 5 7 6		
m	194 000 1 4 5 2 1	Raised floor height adjustment feet for use with Katherm NK, each set comprising: 1 x flat iron bar, 2 x screws, 2 x M8 adjustment screws with sound insulation for Katherm NK 182 for Katherm NK 272 for Katherm NK 340 for Katherm NK 400 Type Kampmann, article no. 1940000145_1, type 145_1		
		2 3 5 4		
	required to complete DataNorm/EDV article no.			

for DataNorm/EDV entry,
use article no.

1.45 Katherm NK - Natural convection

Specifications

Controls

Qty.	Article no.	Description	Price/each	Total price
pc.	194 000 146 927	Room thermostat flush-mounted, manufactured by Jung, temperature set using dial, main switch with indicator; with thermal setback and separate terminal for night set- back; white central plate and frame Temperature range approx. 5 - 30 °C Switching differential 0.5 K Night setback 4 K Protection IP 20 Dimensions W x H x D 65 x 65 x 42 mm Type Kampmann, article no. 194000146927, type 146927		
pc.	194 000 146 904	Room thermostat 230 V, in a flat surface-mounted housing, white, with thermal setback; with temperature range restriction Temperature range approx. 5 - 30 °C Protection IP 30 Dimensions W x H x D 70 x 70 x 35 mm Type Kampmann, article no. 194000146904, type 146904		
pc.	194 000 146 910	Clock thermostat 230 V/50 Hz, in attractive white surface-mounted housing, with electronic 2-point room temperature control and digital weekly clock, power reserve 15 min; party switch; indicator showing automatic/day/night/off switch Temperature range 10 - 30 °C Night setback 2 - 10 K Protection IP 20 Dimensions W x H x D 140 x 70 x 30 mm Type Kampmann, article no. 194000146910, type 146910		
pc.	194 000 146 932	Clock thermostat 230 V/50 Hz, flush-mounted housing, white frame and cover; large display with required and actual values; 4-button operation; setting of day/week programme; party function; frost protection Temperature range 5 - 30 °C Protection IP 20 Power reserve approx. 1 hour Contact change-over contact, single-ended Max. amperage 2 A Dimensions 84 x 84 mm, 18 mm height Type Kampmann, article no. 194000146932, type 146932		
	required to complete DataNorm/EDV article no.			

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use article no.

Project-specific solutions



Recess with cover plate



Mitred corner, acute angle



Curved unit



Mitred corner with cut-out

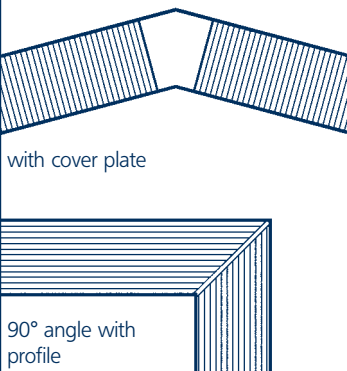
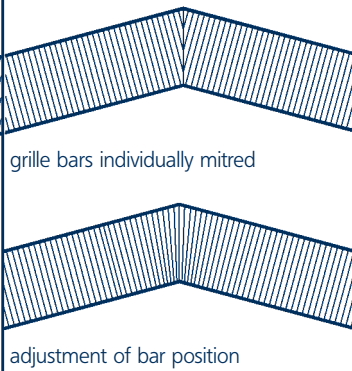
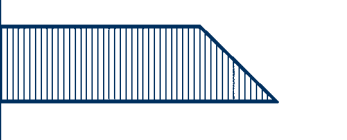
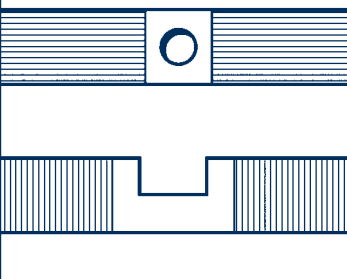
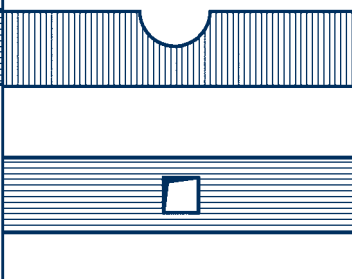
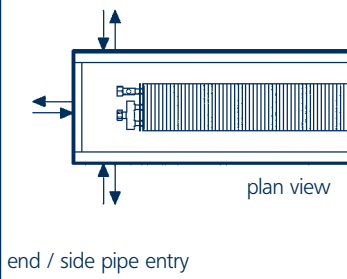
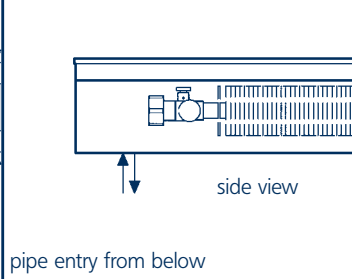
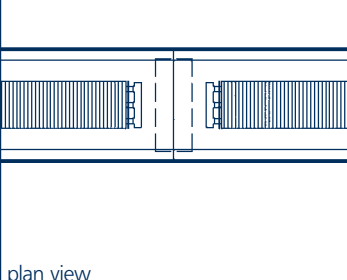
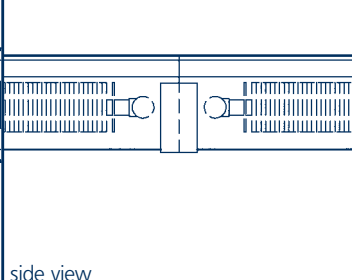
Tailor-made solutions, based on the **Katherm NK** system, have been developed by Kampmann in collaboration with architects, designers and heating contractors.

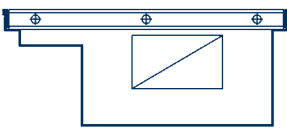
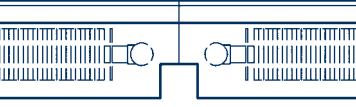
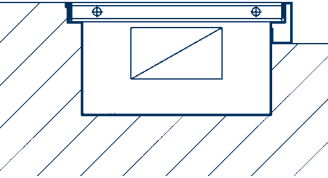
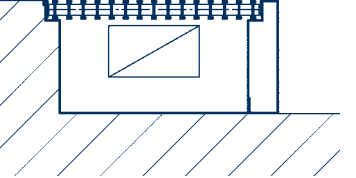
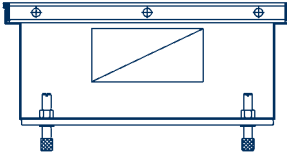
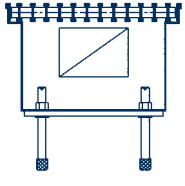
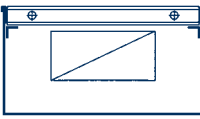
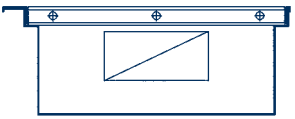
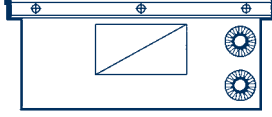
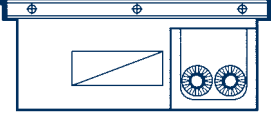
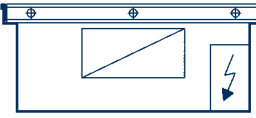
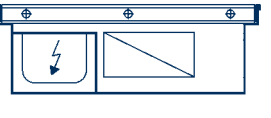
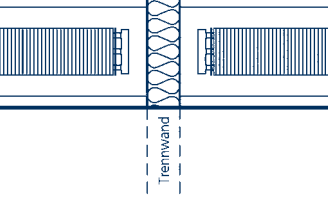
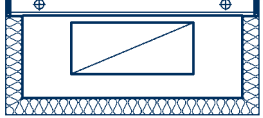
When asked to do so, the Kampmann installation team will take dimensions and ensure the precise manufacture of mitred corners, curves and recesses. In this way the correct and exact fitting of complicated components is easily done!

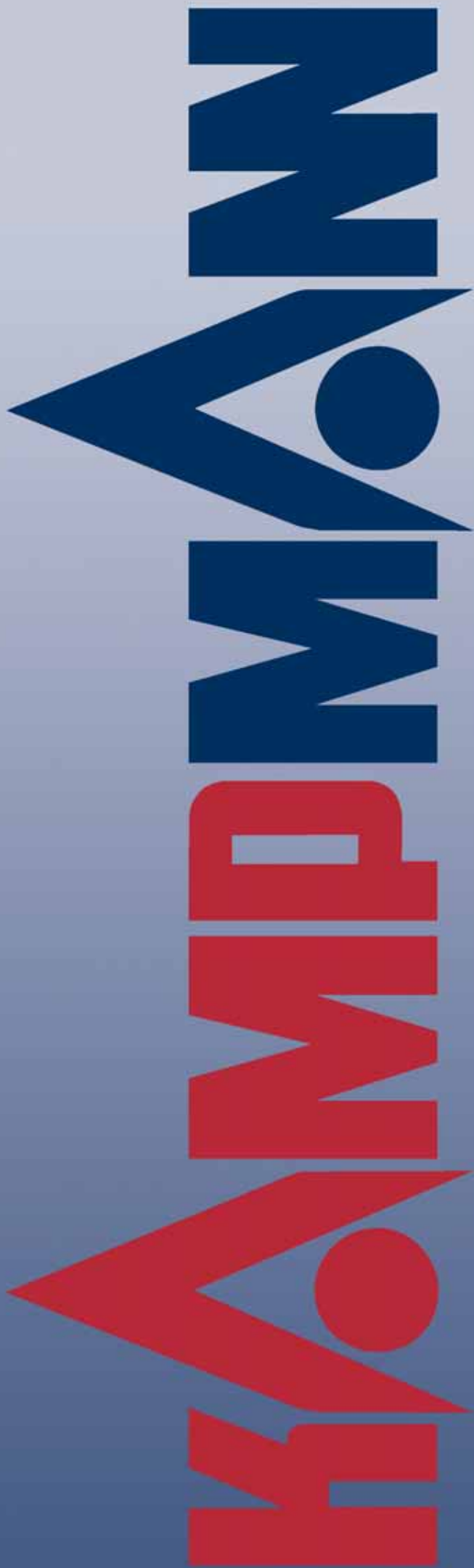
1.45 Katherm NK - Natural convection

Ready-to-install floor duct convectors

Project solutions

1. Mitred corner designs • mitred, acute/obtuse/90° angle • convectors are joined using flexible connections • all designs are available with roll-up or linear grille	 with cover plate 90° angle with profile	 grille bars individually mitred adjustment of bar position
2. Mitres		
3. Recesses and cut-outs • any shape or form to integrate columns, mullions etc. • cover plates in a range of materials: – natural brass – anodized aluminium – stainless steel		
4. Cover plates under partition walling used to fit duct around under existing partition walling	 Partition walling Window mullions Partition walling	
5. Connection options the convector can be connected from all sides by means of pipe openings in the duct	 plan view end / side pipe entry	 side view pipe entry from below
6. Coupling to create continuous duct lengths with cover plate over join	 plan view	 side view

7. Duct cut-outs/recesses 1. to fit around structural beams 2. duct cut-outs around façade anchors	 cross-section (1.)	 plan view (2.)
8. Step with front panel design harmoniously fits within floor structure	 side partially encased	 side completely encased
9. Mounting feet adjustable height adjustment/free-standing fixing within raised floor	 within floor duct	 within floor duct
10. Frame design	 without lip	 connection to structural component
11. Pipework laid within duct space-saving pipework solutions	 pipework laid within duct	 pipework laid within separate duct
12. Integral electrical/computer ducts practical building solutions	 directly in the floor duct	 in a separate, integral duct
13. Insulation 1. sound insulating barrier prevents noise transfer from room to room 2. duct is completely encased in sound insulating material	 insulating sound barrier (1)	 insulation around outside of floor duct (2.)



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