



■ Decorative radiators ■ Comfortable indoor ventilation ■ Heating and cooling ceilings ■ Clean air solutions

# Zehnder ZFP goes urban

## The new radiant ceiling panel in industrial design

# Reasons why –

## 6 reasons to choose this solution!

1

### **Eye-catching industrial design:**

Stylish accent or seamless integration – there are endless options to choose from.

2

### **Ready for assembly:**

Up to 9m<sup>2</sup> panels in one piece – delivered ready to connect!

3

### **Quick installation:**

Plug-and-play solution – easily save time on site!



4

**Optimal indoor environment:**

At work or in the restaurant – low noise level due to perforated radiant plate.

5

**All-in-one solution:**

Heating? Cooling? Lighting? The ZFP Urban ensures a perfect feel-good climate in any indoor space.

6

**Unrestricted use of space:**

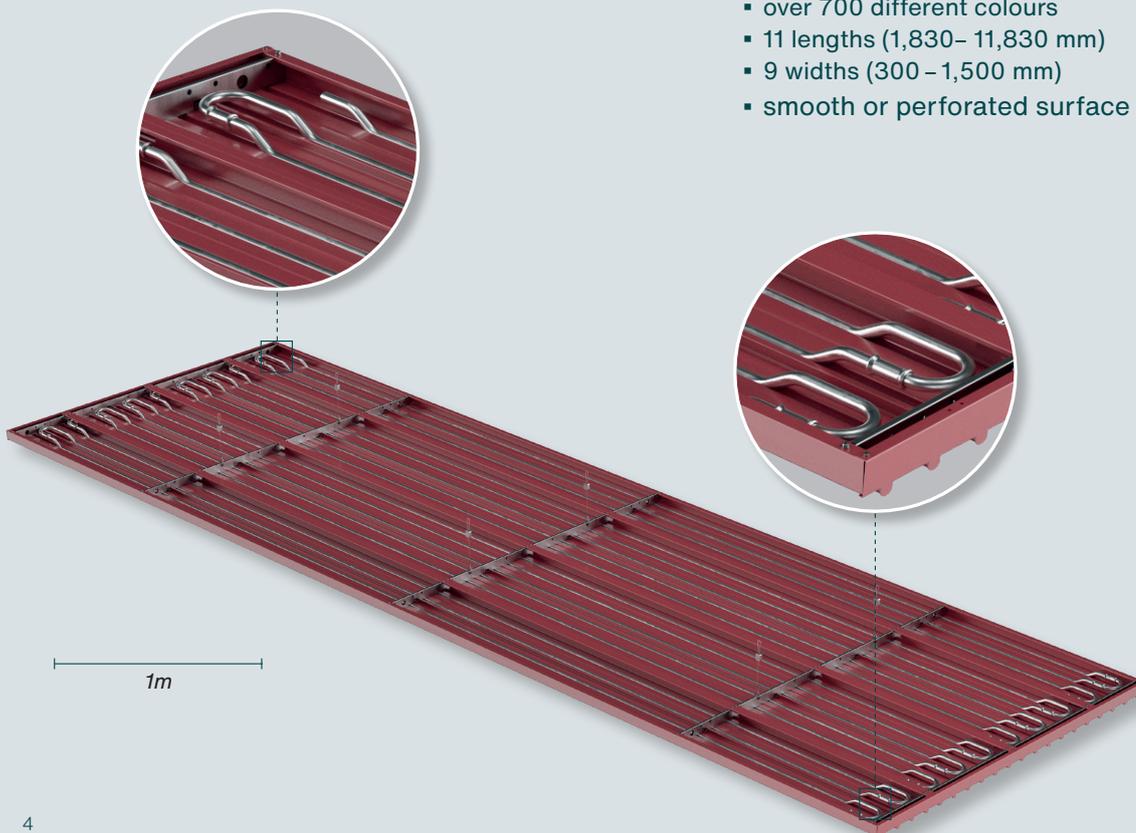
Freedom of design with the ceiling-mounted heating and cooling solution.



## Design freedom

Design your radiant ceiling panel together with us. You can choose from:

- over 700 different colours
- 11 lengths (1,830– 11,830 mm)
- 9 widths (300 – 1,500 mm)
- smooth or perforated surface

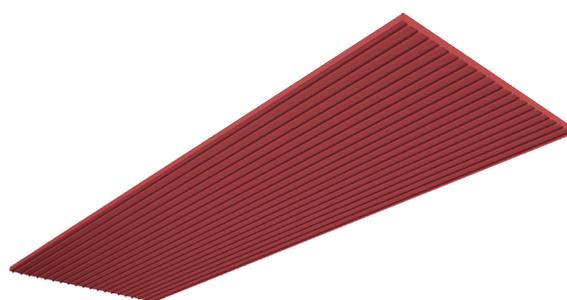


# Inspiring design!

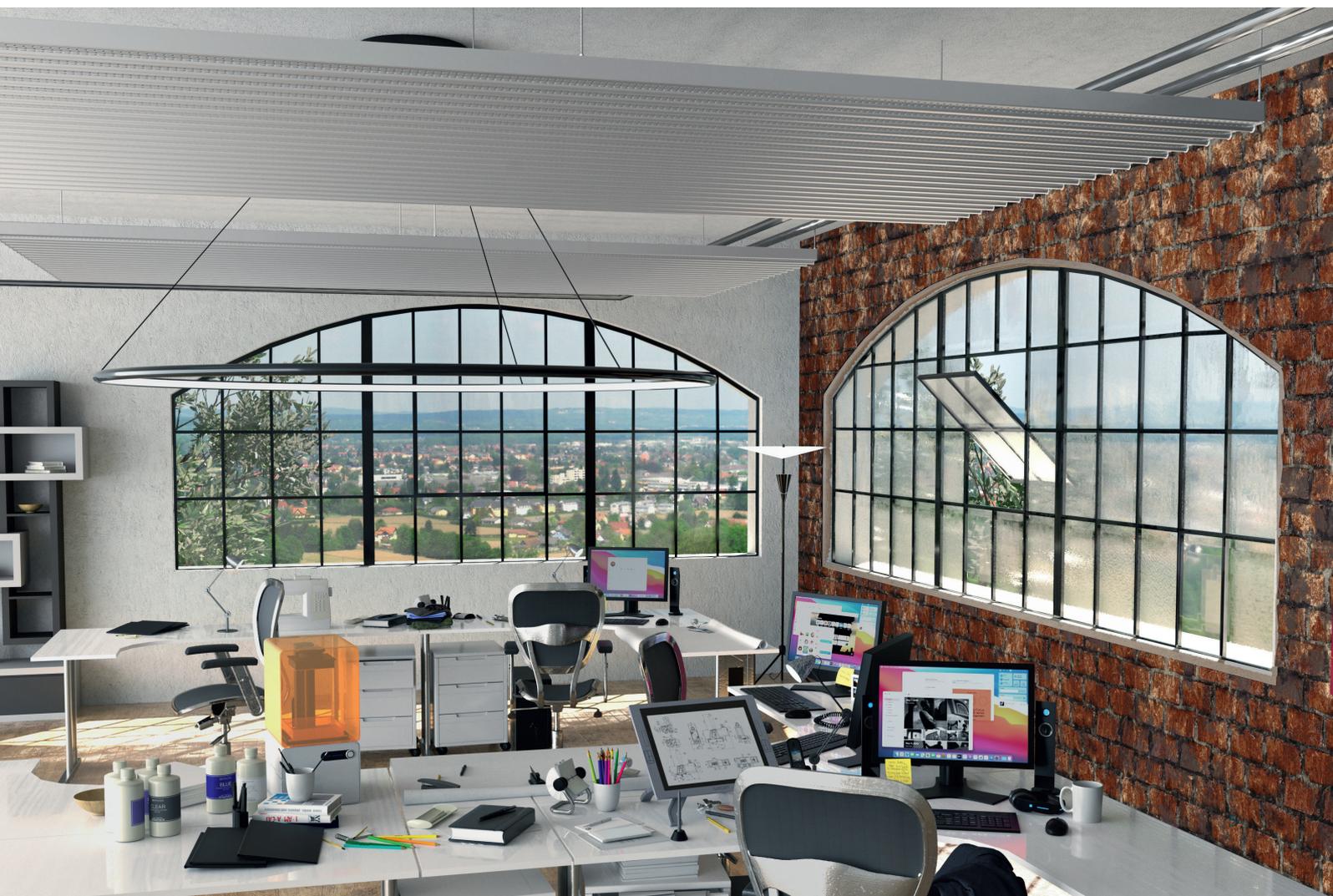
## New areas of application

**Efficiency, sustainability and flexibility are the basis of our heating and cooling ceilings.**

The Zehnder ZFP Urban is opening up new areas of application for our radiant ceiling panels! Thanks to the tried and tested technology and exceptional design, the solution's use in offices, meeting rooms, restaurants and nearly all indoor spaces is a piece of cake. Whether as an eye-catcher with an industrial design or unobtrusively integrated into the room – coupled with its clever technology, the Zehnder ZFP Urban ensures a perfect feel-good climate in any setting!



The Zehnder ZFP Urban in perforated design



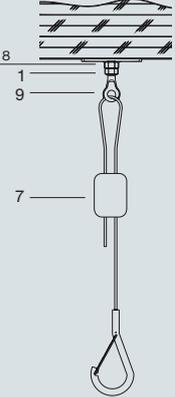
# Wire cable suspension

There are six wire cable suspension solutions for installing the radiant ceiling panels. In addition, Zehnder offers a number of customised solutions on request.

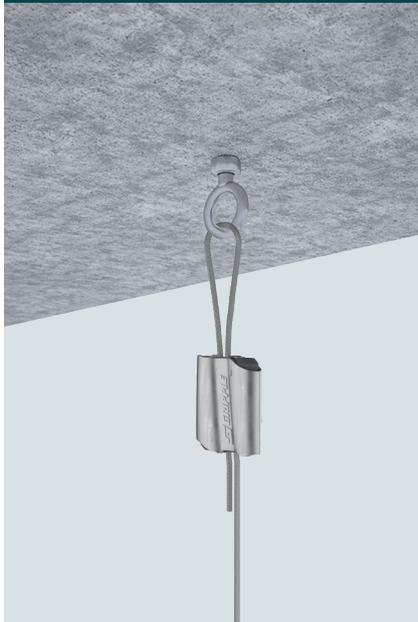
**Wooden ceiling**



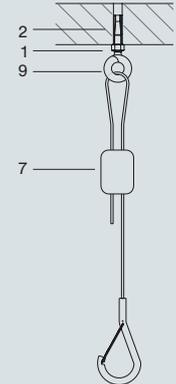
**KN 62\***  
 Minimum suspension height: 193 mm  
 Item number: 518000



**Concrete ceiling**



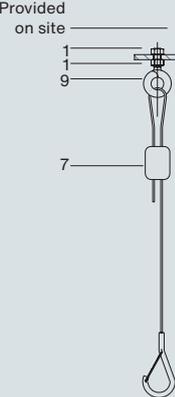
**KN 63**  
 Minimum suspension height: 180 mm  
 Item number: 518010

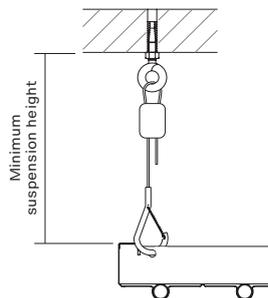


**Steel profile**



**KN 64**  
 Minimum suspension height: 180 mm  
 Item number: 518030





Key	Item number:
1 Hexagon nut M8	506080
2 Steel dowel M8	961120
3 Girder clamp M8	506030
4 Securing clip	506100
5 Flat leaf screw M8	506050
6 Trapezoidal hanger M8	506020
7 Wire cable suspension with carabiner and height adjustment	517980
8 Base plate M8	513500
9 Eyelet screw M8	506040
10 Washer M8	959020
11 Hexagon screw M8 x 40	506070
12 Hexagon screw M8 x 110	501500
13 Turnbuckle M6 x 110	506120

**Trapezoidal sheet metal**

**KN 66**  
Minimum suspension height: 222 mm  
Item number: 518040

Provided on site

**Inclined steel girder**

**KN 67**  
Minimum suspension height: 211 mm  
Item number: 518050

Provided on site

**Horizontal steel girder**

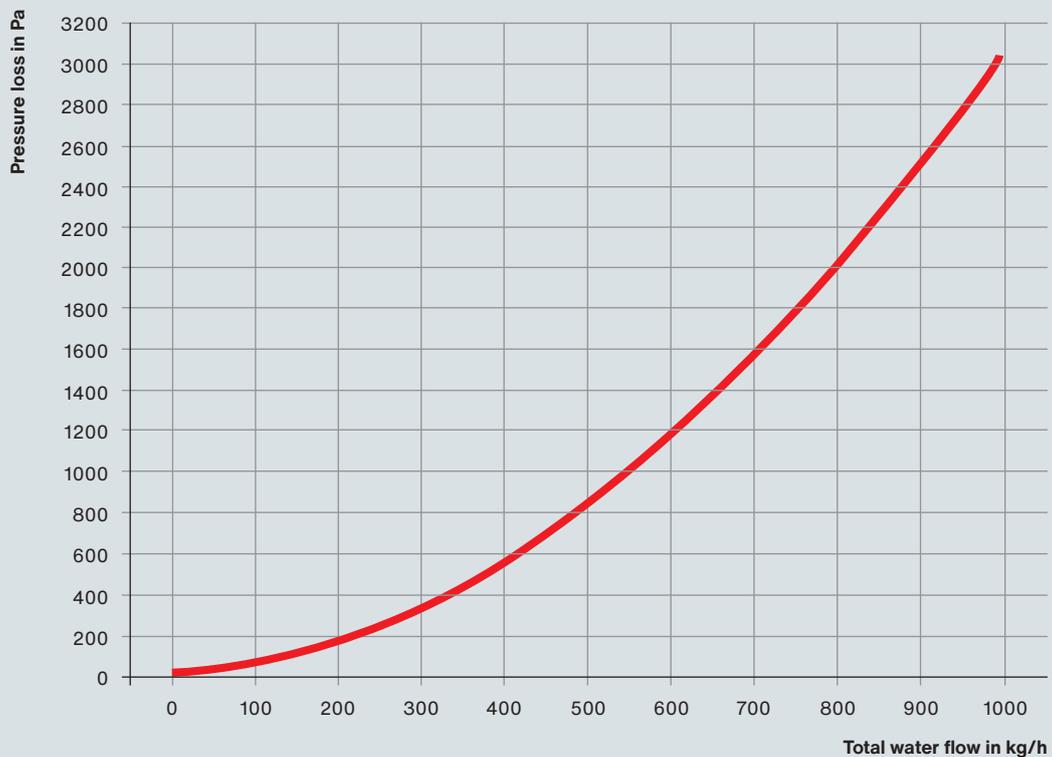
**KN 68**  
Minimum suspension height: 190 mm  
Item number: 518060

Provided on site

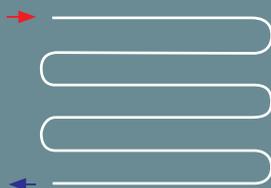
# Pressure loss calculation

The total pressure loss for the Zehnder ZFP radiant ceiling panel is calculated as a total of the pressure loss in the tube and the pressure loss in the bends. When using Zehnder volume flow controllers, their additional pressure loss should be added to this.

Pressure loss per bend



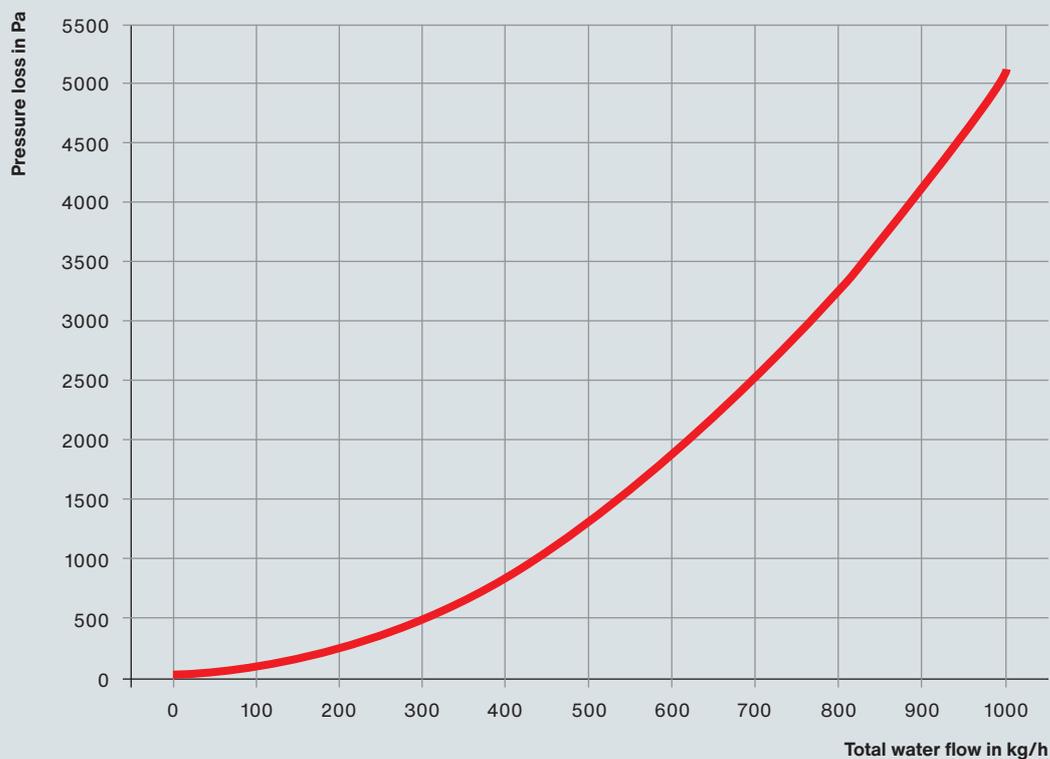
**Determining the pressure loss:**



e.g. ZFP Urban 450/6, 6 m

- 1 Calculate total mass flow of the radiant ceiling panel in question.  
  
Calculation formula:  
 $\dot{m} = (\dot{Q} * 0.86) / \Delta T$   
 $\dot{Q}$  = power (W)  
 $\Delta T$  = temperature difference (K)  
 $\dot{m}$  = mass flow (kg/h)
- 2 Determining the number of tubes: The number of tubes per module is the module width / 75
- 3 Determining the number of bends: Number of tubes - 1
- 4 Read the pressure loss for the bend from the diagram.
- 5 Determining the total tube length: (Nominal module length in full m - 1) \* Number of tubes + 0.57 m (connecting piece VL / RL)
- 6 Refer to the graph for the pressure loss of the tube.
- 7 The total pressure loss of the radiant ceiling panel is calculated as follows:  
 Bend pressure loss\*  
 Number of bends + tube pressure loss \* total tube length

**Pressure loss per tube**



# Technical data

Whether dimensions, operating temperature or weight, the Zehnder ZFP Urban grants you the greatest flexibility. You will find much of the information needed to design a system with Zehnder ZFP in the table below.

## Dimensions, operating parameters and output

Feature	Unit of measurement	300/4	450/6	600/8	750/10	900/12	1050/14	1200/16	1350/18	1500/20
Number of tubes	Piece(s)	4	6	8	10	12	14	16	18	20
Tube material	-	Precision steel tube 15 x 1 mm, welded, external galvanisation in line with EN 10305-3								
Radiant plate	-	Fully galvanised, coated sheet steel								
<b>Dimensions</b>										
Widths	mm	300	450	600	750	900	1050	1200	1350	1500
Tube spacing	mm	75								
Minimum module length	mm	1830								
Maximum module length	mm	5830								
Suspension points per axis	Piece(s)	2								
Transverse distance between suspension points (A) <sup>1)</sup>	mm	236	386	536	686	647	703	553	703	647
<b>Operating parameters<sup>2)</sup></b>										
Max. operating temperature	°C	95 <sup>3)</sup>								
Max. operating pressure	bar	5 <sup>3)</sup>								
<b>Weight<sup>4)</sup></b>										
Empty weight without water content, with insulation	kg/m	3.9	5.4	7.6	9.2	10.7	13.0	14.6	16.1	18.4
Insulation weight	kg/m	0.2	0.3	0.6	0.6	0.7	0.8	0.9	1.0	1.2
Water content	l/m	0.5	0.8	1.0	1.3	1.6	1.9	2.1	2.4	2.6
Operating weight with water content, with insulation	kg/m	4.4	6.2	8.6	10.5	12.3	14.9	16.7	18.5	21.0

Feature	Unit of measurement	300/4	450/6	600/8	750/10	900/12	1050/14	1200/16	1350/18	1500/20
<b>Thermal output</b>										
Thermal output according to EN 14037-3 at $\Delta T = 55$ K with insulation	W/m	202	283	364	438	512	586	660	736	813
Thermal output constant (K)	-	1.695	2.42	3.17	3.839	4.517	5.204	5.899	6.732	7.6
Thermal output exponent (n)	-	1.193	1.188	1.184	1.182	1.181	1.179	1.177	1.172	1.166
<b>Cooling capacity with thermal insulation</b>										
Cooling capacity according to EN 14037-4 at $\Delta t = 8.5$ K without insulation	W/m	29	42	55	67	79	91	103	116	129
Cooling capacity constant (K)	-	2.752	4	5.247	6.383	7.518	8.653	9.789	11.006	12.224
Cooling capacity exponent (n)	-	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
<b>Cooling capacity without thermal insulation</b>										
Cooling capacity according to EN 14037-4 at $\Delta t = 8.5$ K without insulation	W/m	35	51	66	81	95	109	124	139	154
Cooling capacity constant (K)	-	3.302	4.8	6.296	7.66	9.022	10.384	11.747	13.207	14.696
Cooling capacity exponent (n)	-	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

1)  When installing on suspension axes

2) Water quality in accordance with VDI 2035

3) Threaded connection

4) The actual load on the supporting structure must be determined during the planning phase.

The horizontal and vertical forces created by the installation conditions on site must be taken into account.

## Scan the QR code and receive additional information about the Zehnder ZFP Urban!

Additional information our ZFP  
Urban Radiant Heating Ceiling  
Panel:



**zehnder**