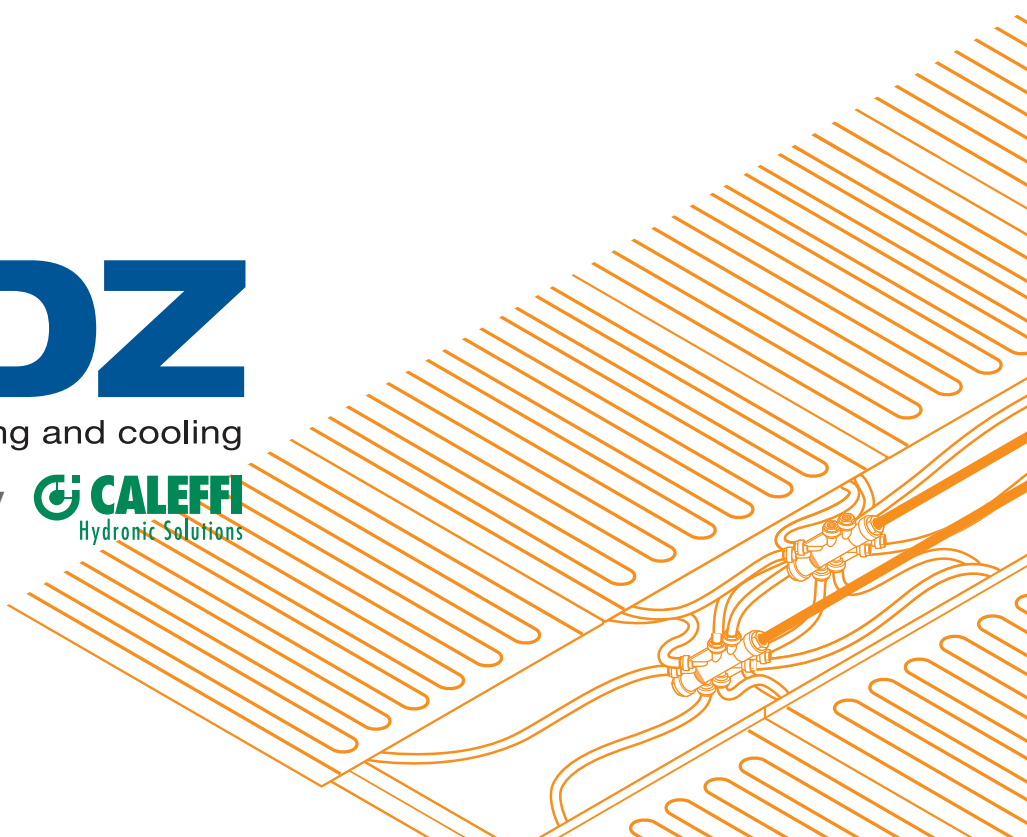


# b!klimax

## radiant wall/ceiling system





**We have been working in an ideal climate for thirty years.**

A climate that has brought us to a position of leadership in Italy in the field of radiant heating and cooling. RDZ was the first company to receive the management system quality certification (today UNI EN ISO 9001:2008).

RDZ has been a quality-oriented company since its very beginning, using the finest materials, developing new solutions, constantly providing excellent service. And also by creating a positive climate in the company to promote the exchange of ideas and stimulate cooperation for constant improvement.



# b!klimax Ceiling and Wall Radiant System. Innovative Wellbeing.

b!klimax is an integrated heating and cooling system that exploits the ability of ceilings and walls to exchange heat and cold with the environment and with people by radiation. In this way the human body can perfectly balance its heat exchanges, increasing the level of perceived comfort.

The increasing request of these kinds of systems ensuring healthy rooms and comfort all year round, as well as the long experience and the constant technologic research urge RDZ to develop some new solutions besides the traditional b!klimax system, in order to guarantee high thermal output, much easier installation and larger versatility of use, also in hospitals and hotels, where there are specific requirements about the reaction to fire.





Invisible comfort  
everytime and  
everywhere.

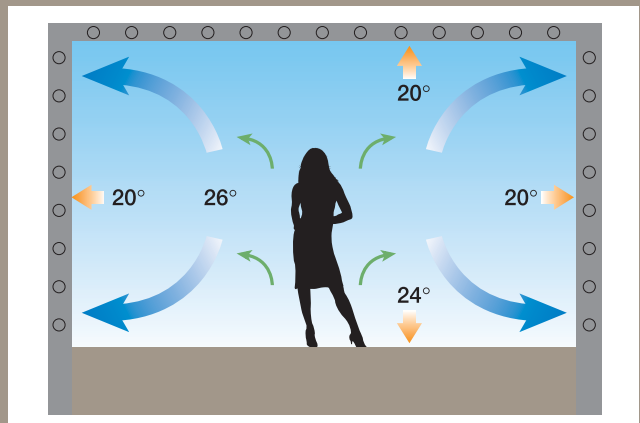
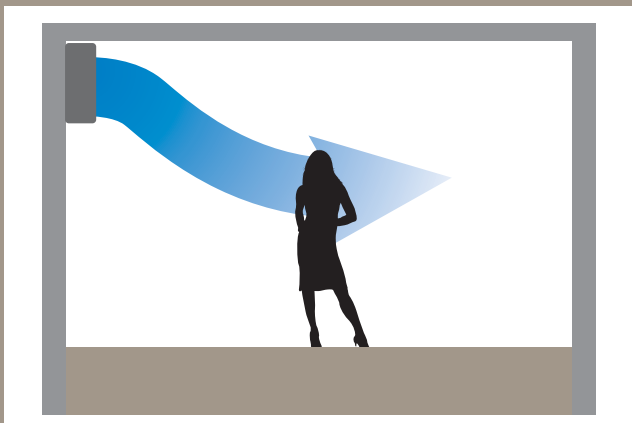


Innovative and versatile, b!klimax is a radiant heating and cooling system for ceilings and walls, which represents an ideal solution in rooms where it is important to maintain comfortable conditions all year round. Its very low thermal inertia and high efficiency make b!klimax the ideal system for houses, renovated buildings and commercial applications.

Completely concealed in ceilings or walls, b!klimax makes it possible to use all the available space while improving the appearance of the room.



## Comfort without air draughts.



With bKlimax there will be no more of those cold draughts caused by traditional air conditioning systems.



# The Reasons for Choosing b!klimax.

b!klimax means comfort. The uniform distribution of heat and cold emitted by the walls and the ceiling through radiation guarantees a homogeneous temperature inside the room, without annoying cold air draughts. b!klimax is a low-temperature system that saves you money on operating costs and can be used with ecofriendly, alternative energy sources. The absence of any convective movements caused by temperature differences between the heating source and the environment means that no dust or impurities are blown into the air, thus improving hygiene.

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**1** Ideal for summer and winter.

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**2** Even temperature distribution.

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**3** Low thermal inertia.

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**4** Energy saving.

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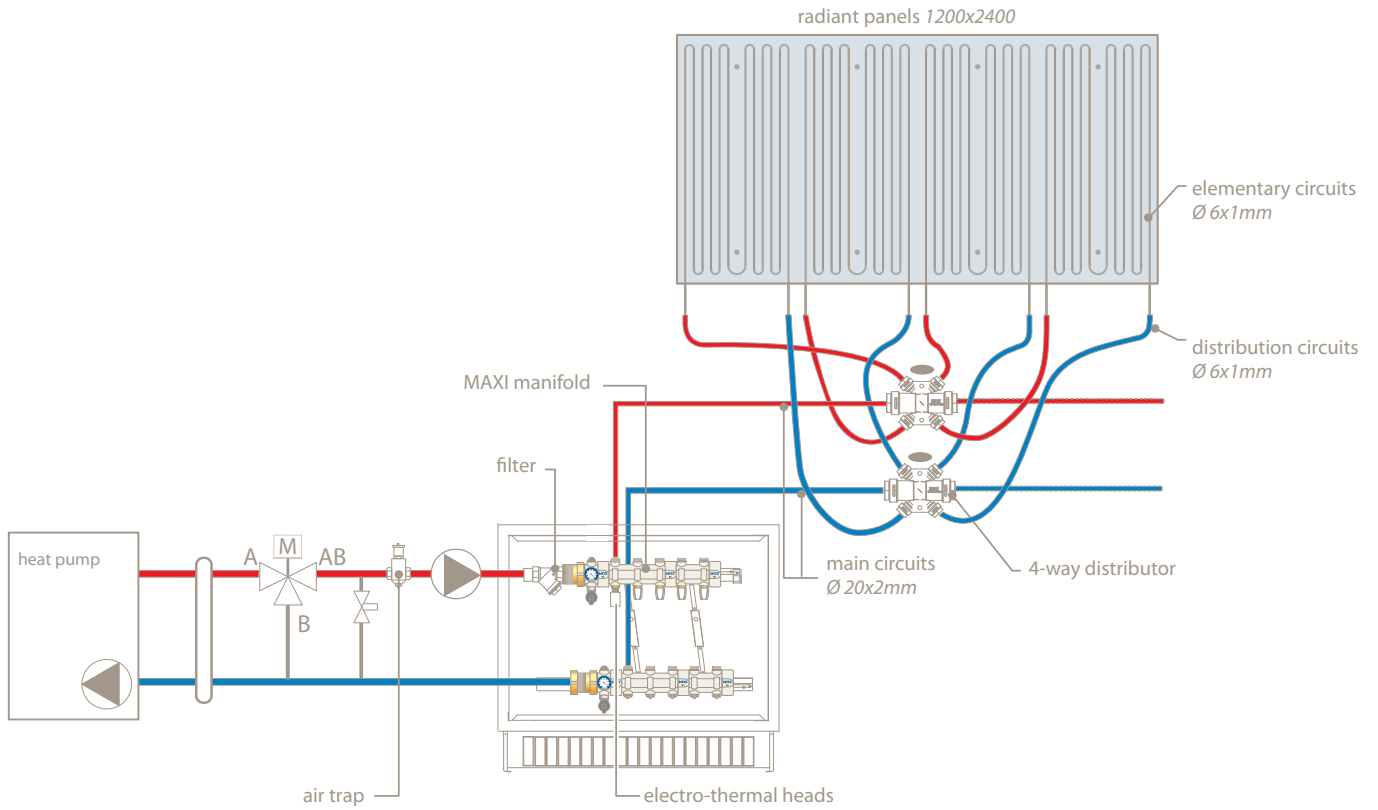
**5** Healthy and nice rooms.

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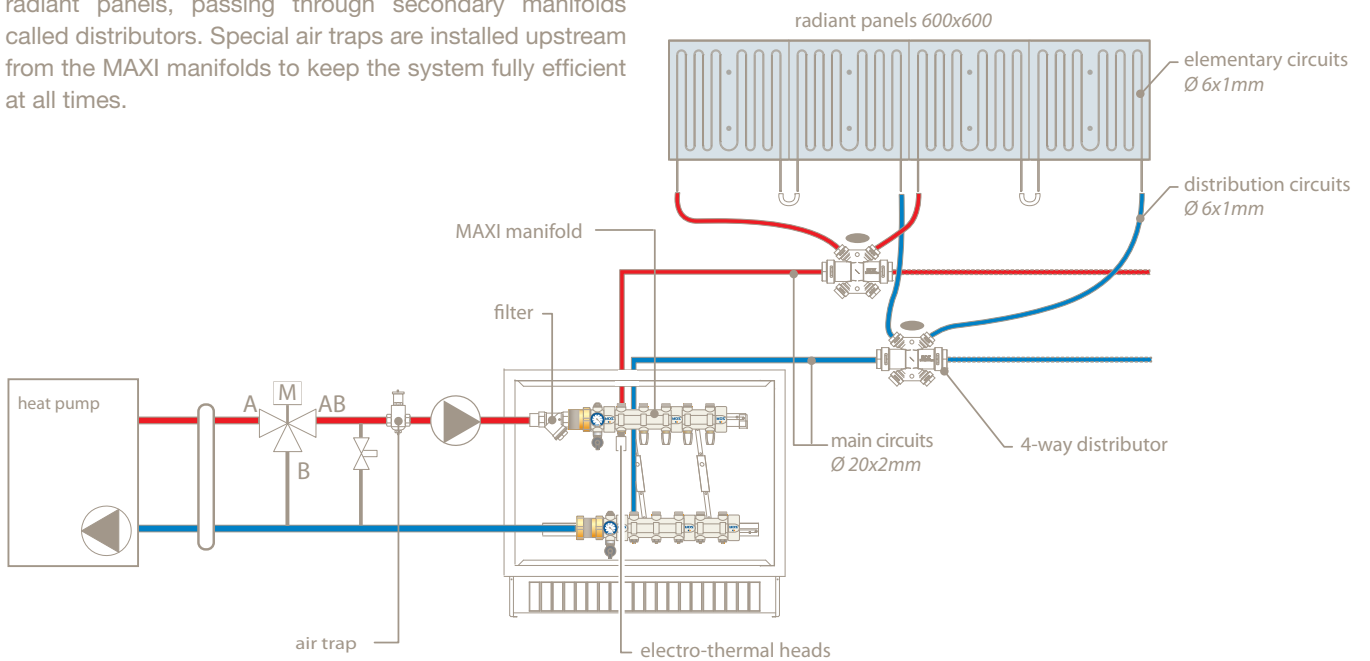
**6** Easy and rapid installation.

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# b!klimax: distribution system diagram.



Using suitable temperature control systems (and buffer tanks, if necessary), the water is sent from the heat generator (boiler and chiller or heat pump) to the main manifolds (called MAXI manifolds) and from there to the radiant panels, passing through secondary manifolds called distributors. Special air traps are installed upstream from the MAXI manifolds to keep the system fully efficient at all times.



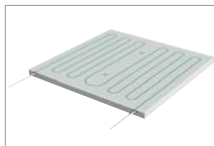




# Panel Index.

The core of b!klimax ceiling system are its radiant panels, which are available in three different versions:

- 1) traditional b!klimax radiant panels.
- 2) b!klimax+ radiant panels with plasterboard and thermal insulation of polystyrene or rockwool.
- 3) b!klimax+ Quadrotto with thermal insulation of polystyrene or rockwool.



**b!klimax: Radiant Panels**  
600x600 - 1200x600 - 2200x600

8



**b!klimax+: Radiant Panel 1200x2400**  
with plasterboard and polystyrene insulation.

10



**b!klimax+: Radiant Panel 1200x2400**  
with plasterboard and rockwool insulation.

12



**b!klimax+: Quadrotto 600x600**  
with polystyrene insulation.

14



**b!klimax+: Quadrotto 600x600**  
with rockwool insulation.

16



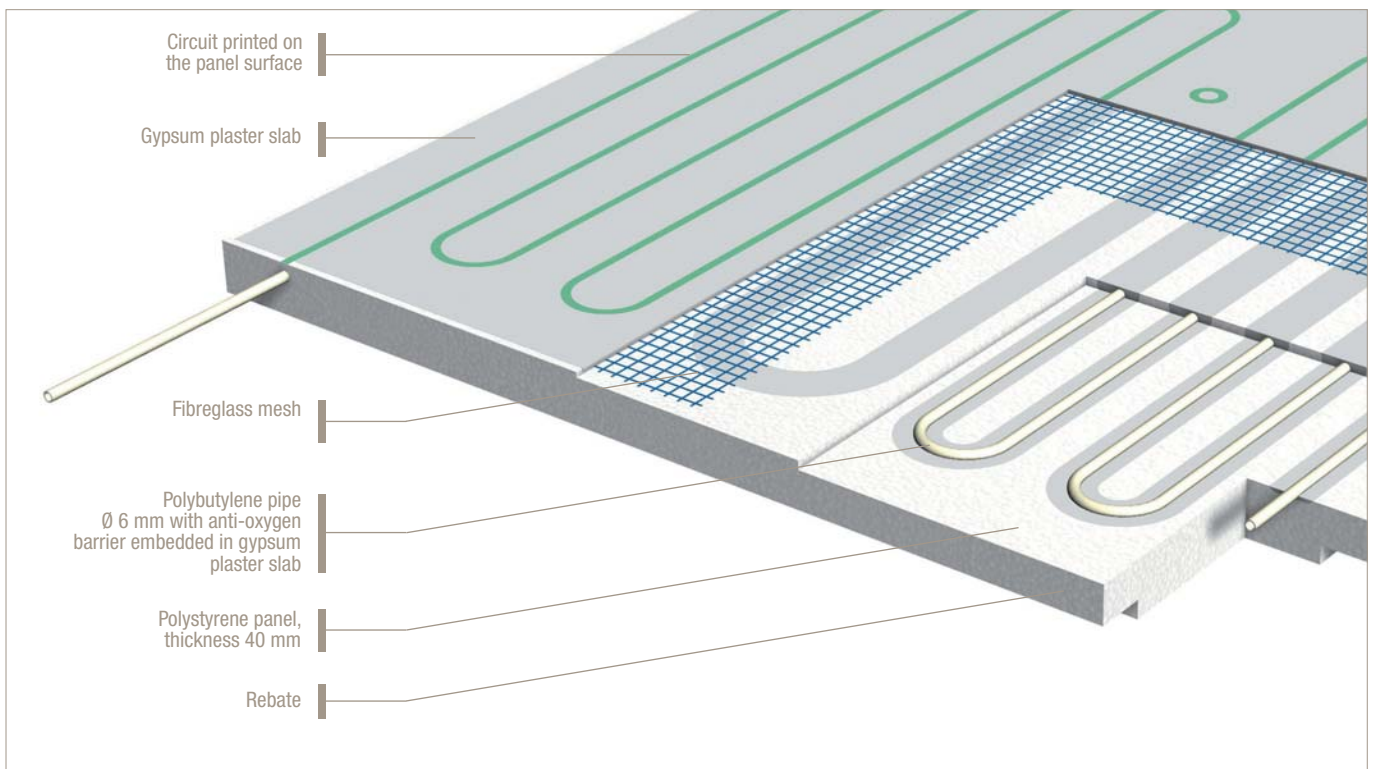
**b!klimax+: Quadrotto 1200x600**  
with polystyrene insulation.

18



**b!klimax+: Quadrotto 1200x600**  
with rockwool insulation.

20





# b!klimax radiant panels 600/1200/2200.

b!klimax is made up of light and handy panels, which are easy to install and guarantee greatest covering freedom and high performance without thermal channels.

b!klimax panels can be mounted on walls or on the ceiling. They are made of moulded polystyrene with a density of 30 Kg/m<sup>3</sup> and a thickness of 40 mm. The panels are provided on all four edges with a 27 mm rebate to prevent thermal channels with the bearing structure. The panels are designed to accommodate PB pipes Ø 6 mm with anti-oxygen barrier conforming to DIN 4726. Panel and pipes are covered by a layer of fibrous plaster to increase their thermal output.

## Dimensions

### Radiant panel 600 code 6100595

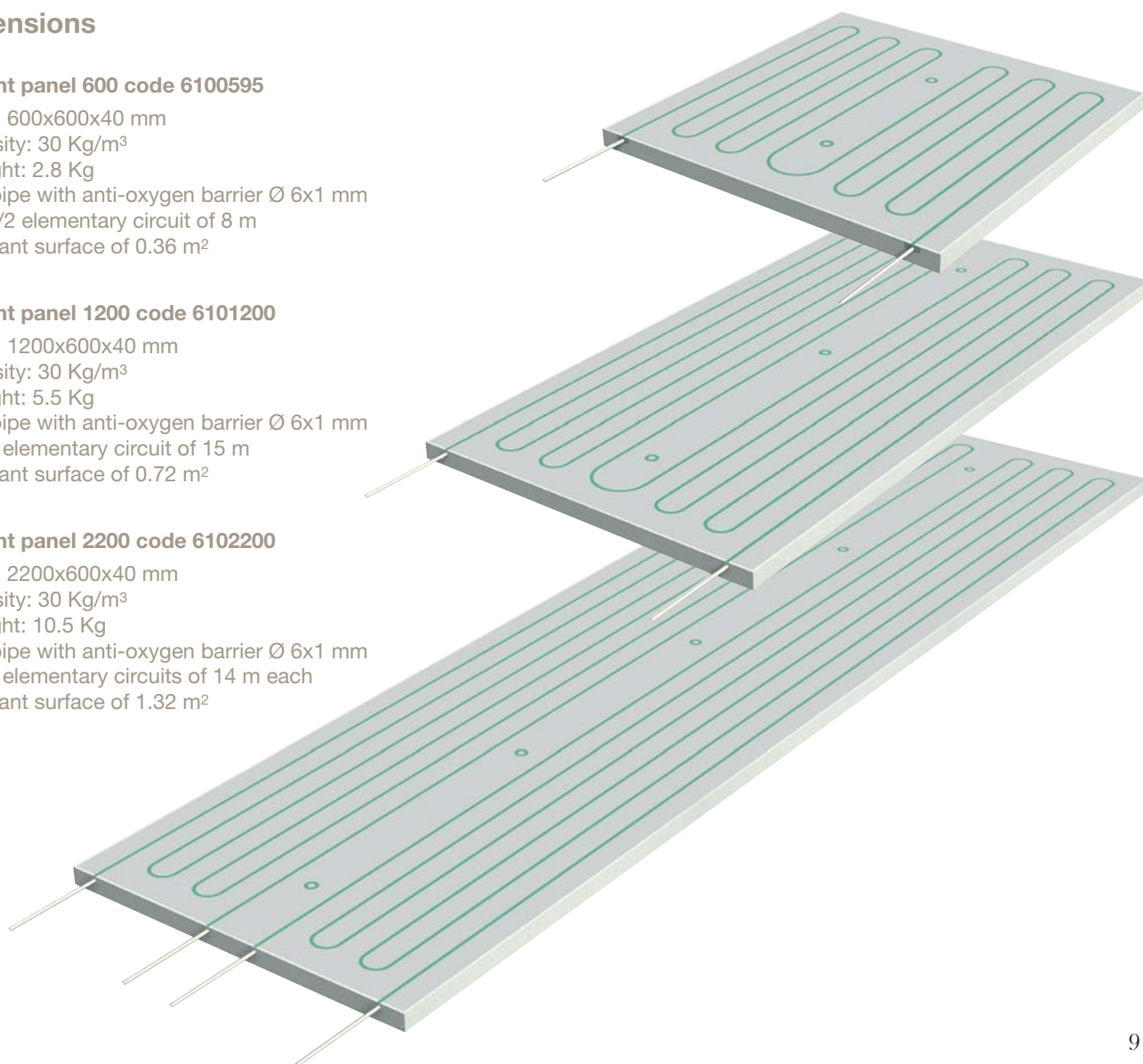
- > Size: 600x600x40 mm
- > Density: 30 Kg/m<sup>3</sup>
- > Weight: 2.8 Kg
- > PB pipe with anti-oxygen barrier Ø 6x1 mm
- > N° 1/2 elementary circuit of 8 m
- > Radiant surface of 0.36 m<sup>2</sup>

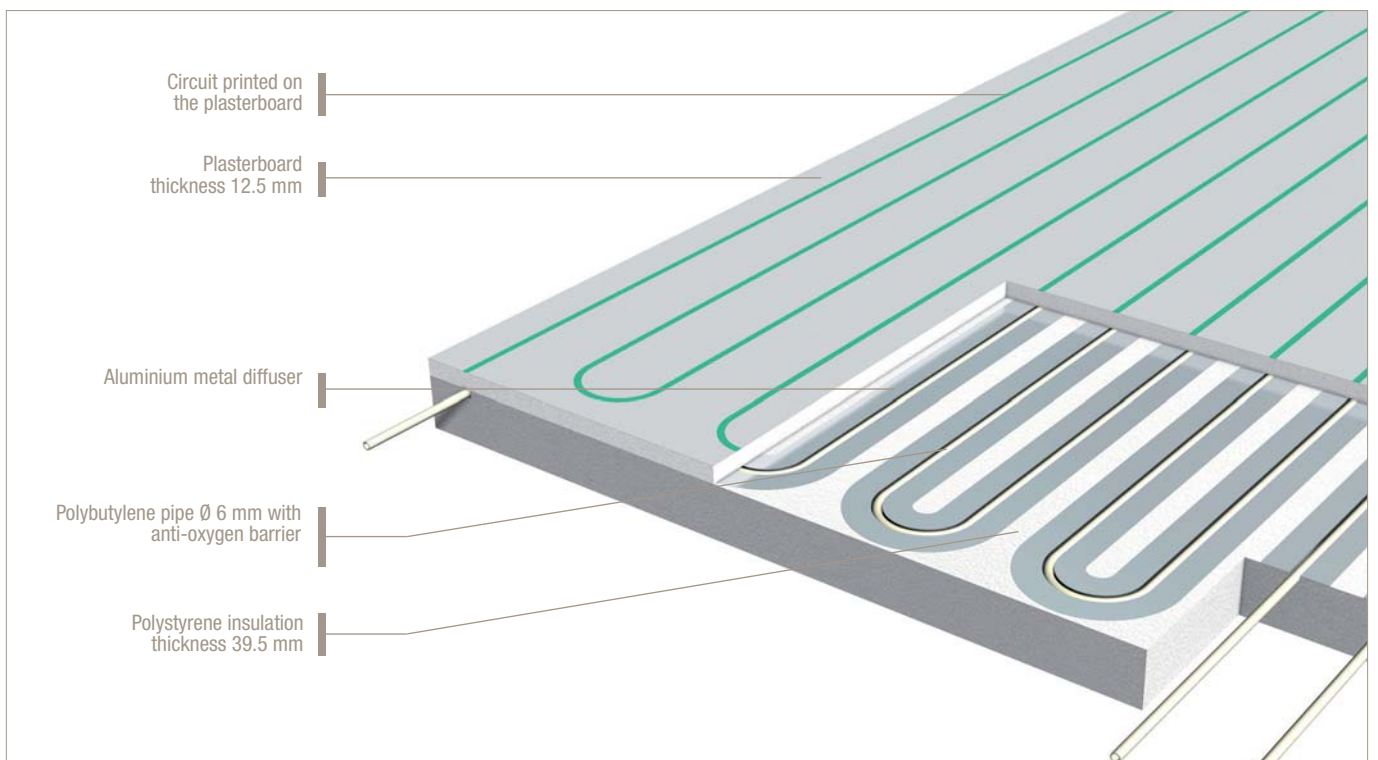
### Radiant panel 1200 code 6101200

- > Size: 1200x600x40 mm
- > Density: 30 Kg/m<sup>3</sup>
- > Weight: 5.5 Kg
- > PB pipe with anti-oxygen barrier Ø 6x1 mm
- > N° 1 elementary circuit of 15 m
- > Radiant surface of 0.72 m<sup>2</sup>

### Radiant panel 2200 code 6102200

- > Size: 2200x600x40 mm
- > Density: 30 Kg/m<sup>3</sup>
- > Weight: 10.5 Kg
- > PB pipe with anti-oxygen barrier Ø 6x1 mm
- > N° 2 elementary circuits of 14 m each
- > Radiant surface of 1.32 m<sup>2</sup>

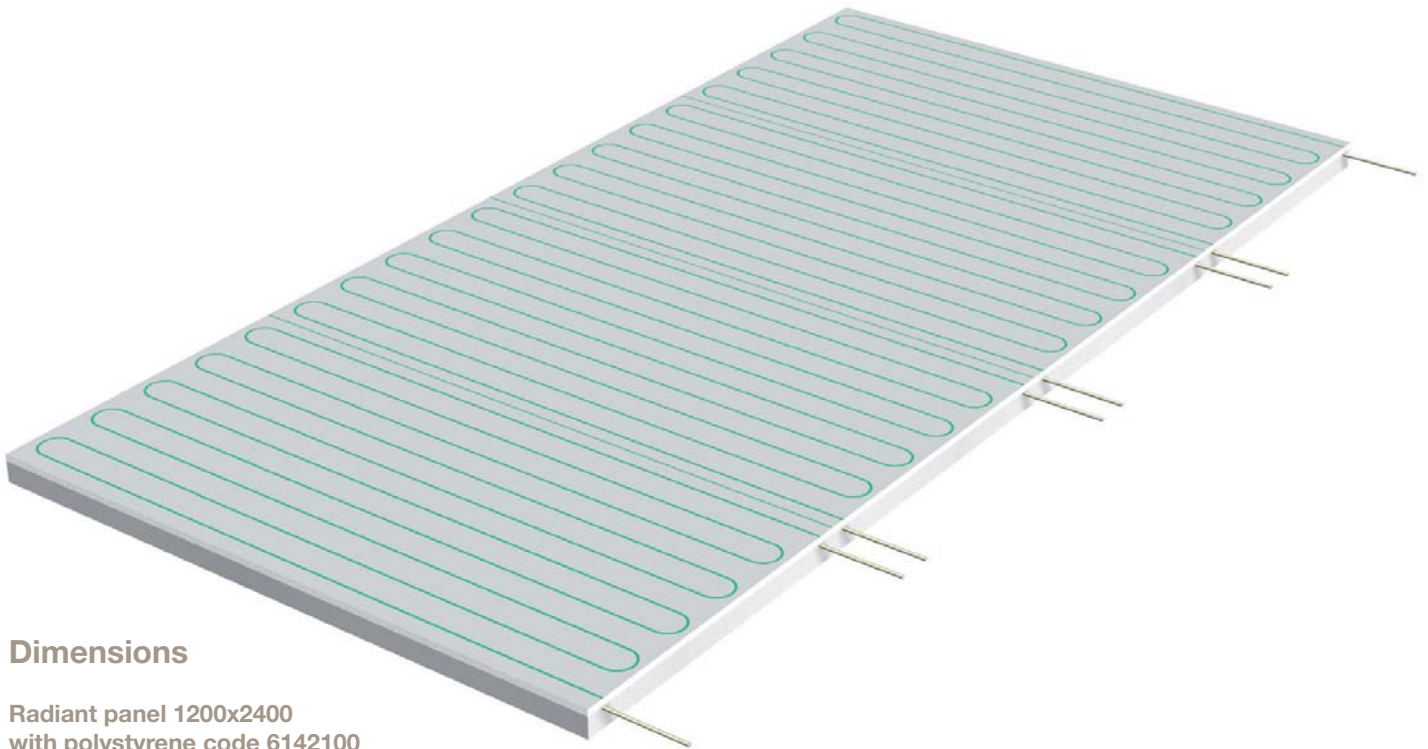






# b!klimax+ radiant panels 1200x2400 with plasterboard and polystyrene insulation.

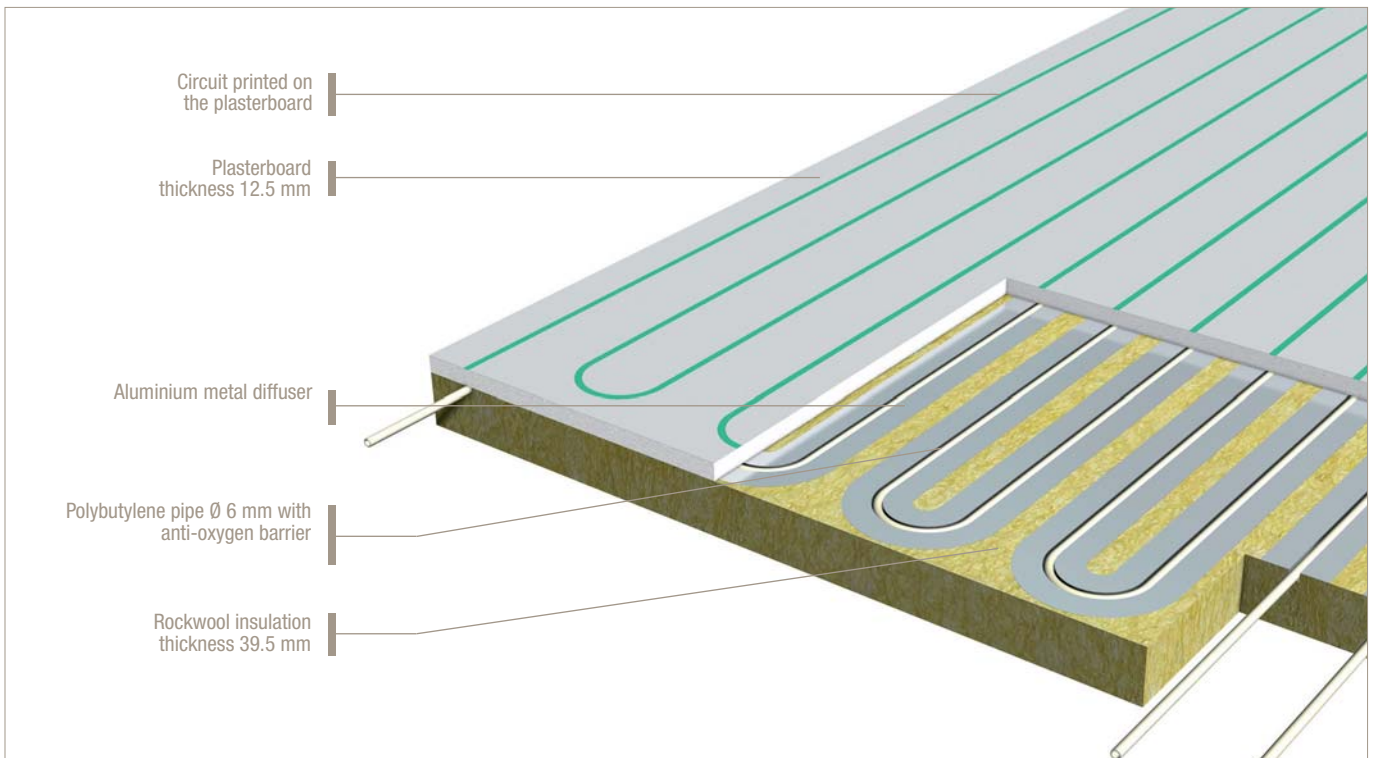
b!klimax+ radiant panels make for fast and easy installation, and they are made up of 12.5-mm thick plasterboard of 2.88 m<sup>2</sup> (1200 mm x 2400 mm). The plasterboard shows a drawing of the 4 hydraulic circuits of PB pipe Ø 6 mm with anti-oxygen barrier according to DIN 4726, which are fixed to the panel through an aluminium metal diffuser. Thermal insulation is assured thanks to a layer of moulded polystyrene, thickness 40 mm and density 30 Kg/m<sup>3</sup>, specifically designed to accommodate PB pipes.



## Dimensions

**Radiant panel 1200x2400  
with polystyrene code 6142100**

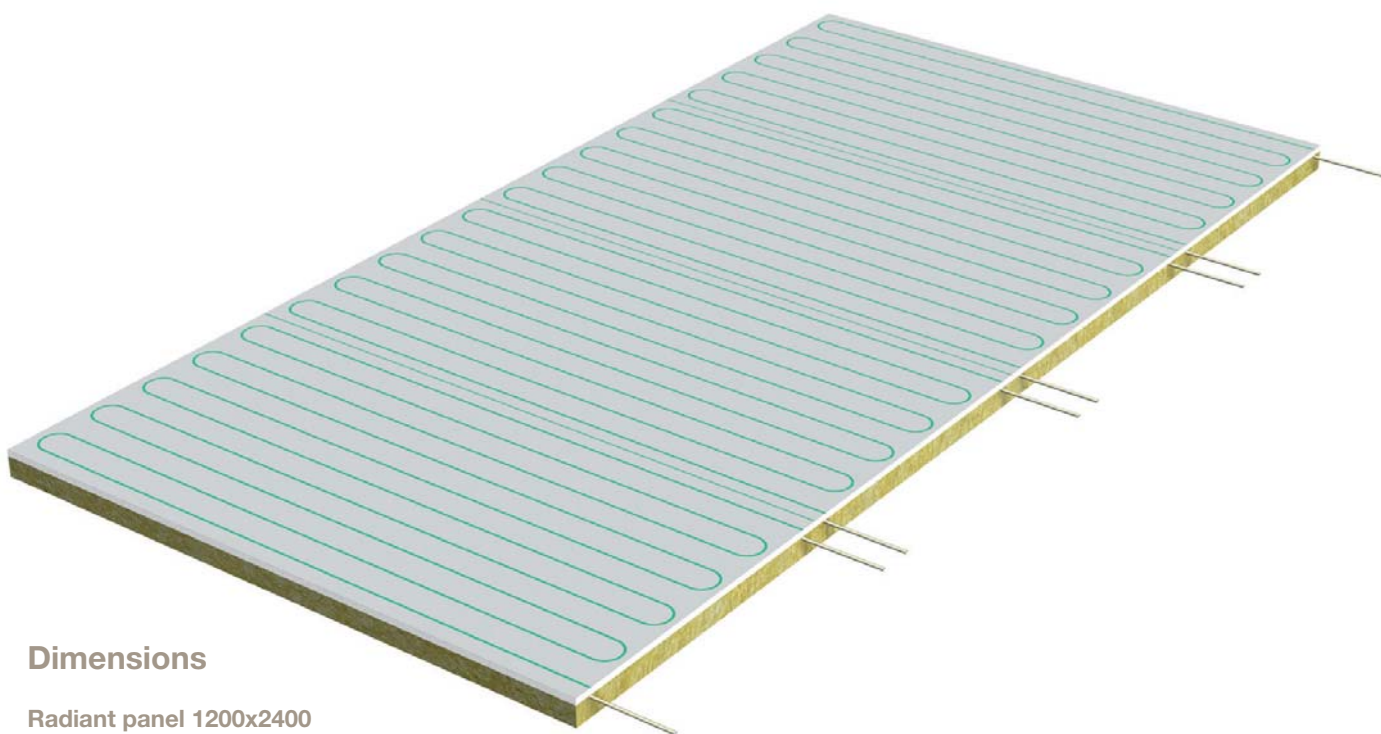
- > Size: 1200x2400x52 mm
- > Polystyrene density: 30 Kg/m<sup>3</sup>
- > Plasterboard thickness: 12.5 mm
- > Plasterboard density: about 750 kg/m<sup>3</sup>
- > Weight: 29.4 Kg/m<sup>2</sup>
- > PB pipe with anti-oxygen barrier Ø 6x1 mm
- > 4 elementary circuits of 11.6 m
- > Radiant surface of 2.88 m<sup>2</sup>





# b!klimax+ radiant panels 1200x2400 with plasterboard and rockwool insulation.

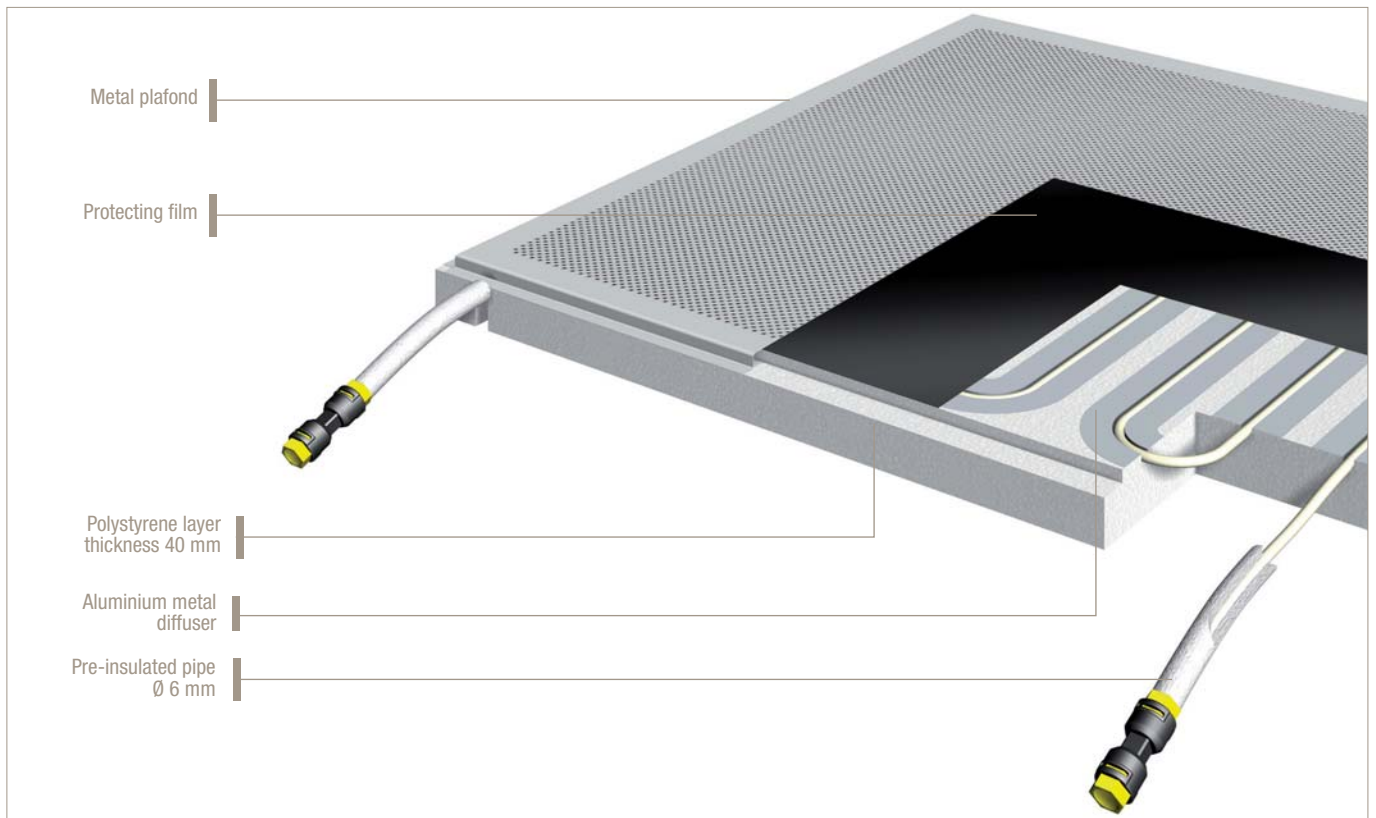
b!klimax+ radiant panels make for fast and easy installation, and they are made up of 12.5-mm thick plasterboard of 2.88 m<sup>2</sup> (1200 mm x 2400 mm). The plasterboard shows a drawing of the 4 hydraulic circuits of PB pipe Ø 6 mm with anti-oxygen barrier according to DIN 4726, which are fixed to the panel through an aluminium metal diffuser. Thermal insulation is assured thanks to a rockwool layer, thickness 40 mm and 165 Kg/m<sup>3</sup>, specifically designed to accommodate PB pipes. Rockwool insulation makes it possible to reach high performance in terms of reaction to fire.



## Dimensions

**Radiant panel 1200x2400  
with rockwool code 6142200**

- > Size: 1200x2400x52 mm
- > Rockwool density: 165 Kg/m<sup>3</sup>
- > Plasterboard thickness: 12.5 mm
- > Plasterboard density: 750 kg/m<sup>3</sup>
- > Weight: 46 Kg/m<sup>2</sup>
- > PB pipe with anti-oxygen barrier Ø 6x1 mm
- > 4 elementary circuits of 11.6 m
- > Radiant surface: 2.88 m<sup>2</sup>







# Quadrotto b!klimax+ 600x600 with polystyrene insulation.

b!klimax+ Quadrotto 600x600 consists of a metal plafond made of steel 5/10 post-painted, base 15 mm, lowered for 8 mm, right angle, micro-perforated surface with a smooth perimeter of 20 mm. One hydraulic circuit, made of PB pipe  $\varnothing$  6 mm with anti-oxygen barrier according to DIN 4726, is fixed to the panel through an aluminium metal diffuser. Thermal insulation is assured thanks to a moulded, shaped polystyrene layer, thickness 40 mm and density 30 Kg/m<sup>3</sup>.

Quadrotto 600x600 makes for fast and easy installation and can be removed for inspection and maintenance operations, even while the system is working. Thanks to its sound-absorbing micro-perforated surface, Quadrotto 600x600 improves the acoustic comfort of the rooms.

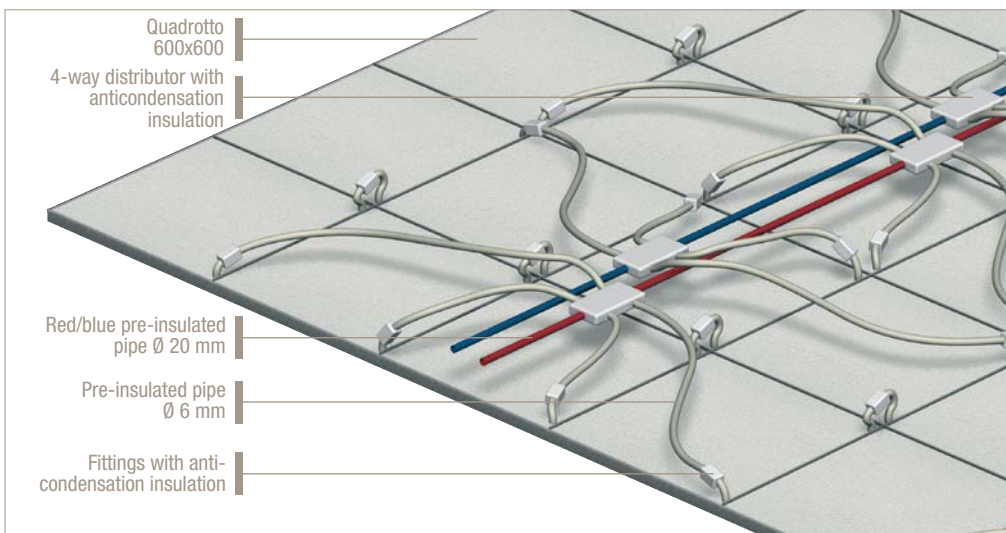
## Dimensions

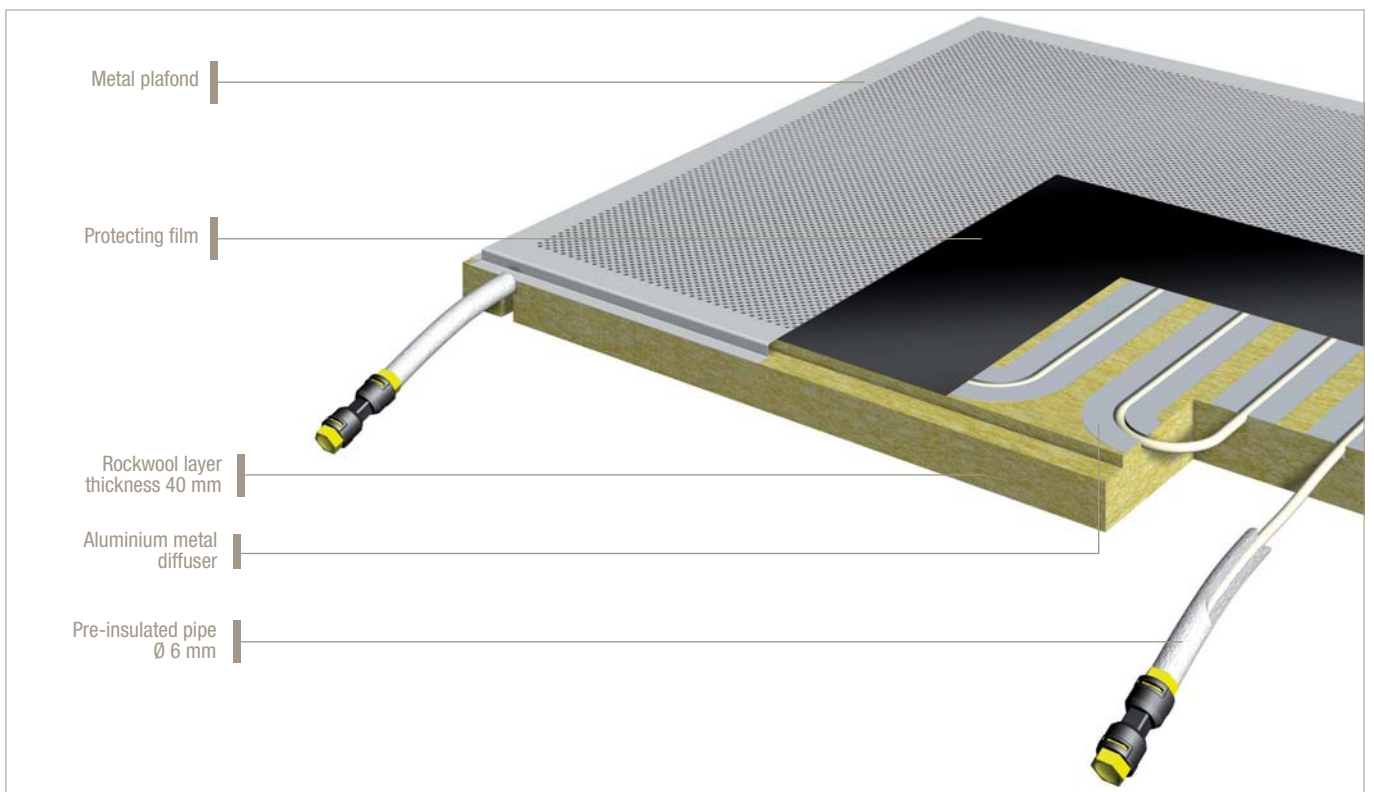
### Quadrotto 600x600 with polystyrene code 6140600

- > Size: 600x600x40 mm
- > Polystyrene density: 30 Kg/m<sup>3</sup>
- > Weight: 1.9 Kg
- > PB pipe with anti-oxygen barrier  $\varnothing$  6x1 mm
- > 1/2 elementary circuit of 4.2 m
- > Radiant surface: 0.36 m<sup>2</sup>



Example of distribution for Quadrotto 600x600  
with polystyrene insulation







# Quadrotto b!klimax+ 600x600 with rockwool insulation

b!klimax+ Quadrotto 600x600 consists of a metal plafond made of steel 5/10 post-painted, base 15 mm, lowered for 8 mm, right angle, micro-perforated surface with a smooth perimeter of 20 mm. One hydraulic circuit, made of PB pipe  $\varnothing$  6 mm with anti-oxygen barrier according to DIN 4726 is fixed to the panel through an aluminium metal diffuser. Thermal insulation is assured thanks to a moulded, shaped rockwool layer, thickness 40 mm and density 165 Kg/m<sup>3</sup>. Furthermore, rockwool insulation makes it possible to reach high performance in terms of reaction to fire.

Quadrotto 600x600 makes for fast and easy installation and can be removed for inspection and maintenance operations, even while the system is working. Thanks to its sound-absorbing micro-perforated surface, Quadrotto 600x600 improves the acoustic comfort of the rooms.

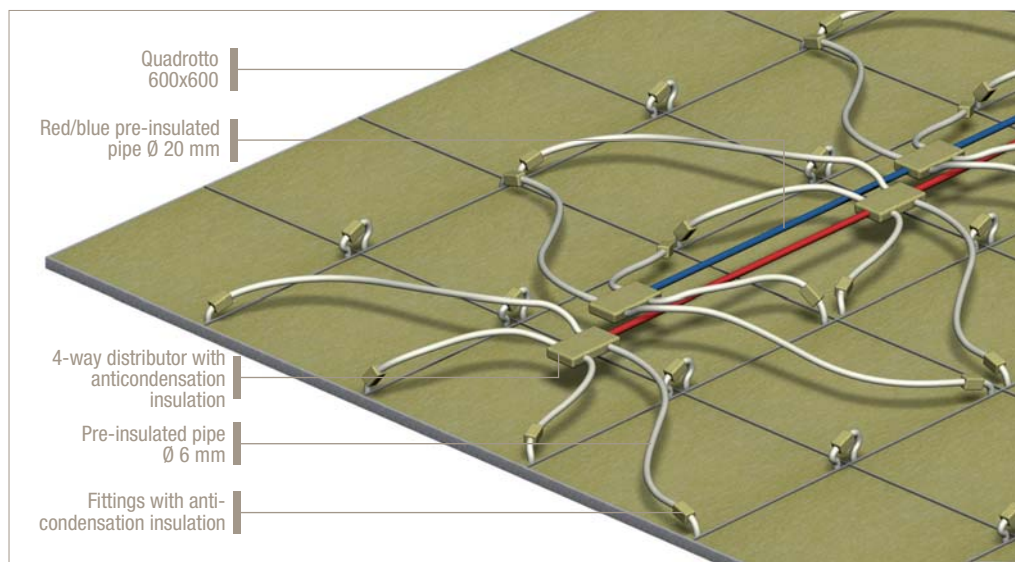
## Dimensions

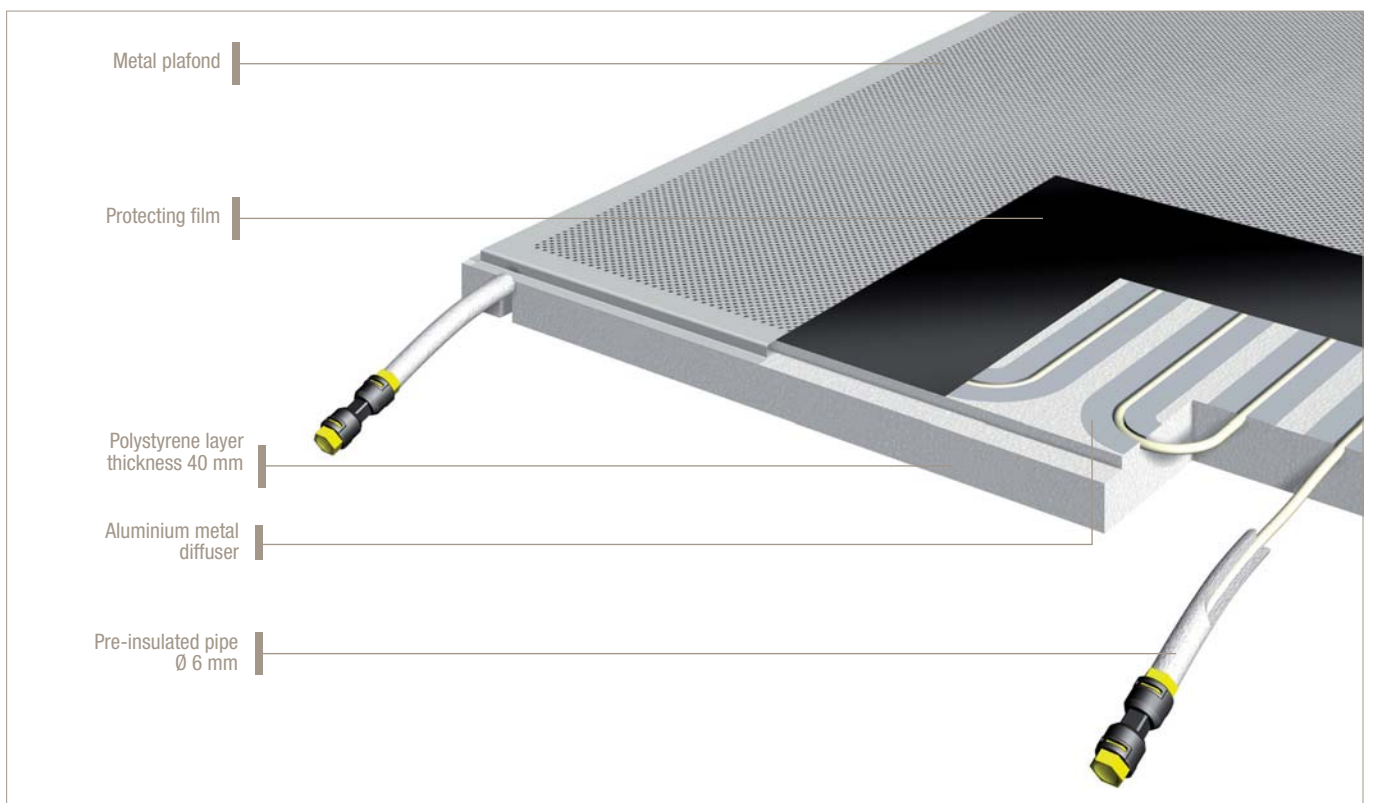
### Quadrotti 600x600 with rockwool insulation code 6140610

- > Size: 600x600x40 mm
- > Rockwool density: 165 Kg/m<sup>3</sup>
- > Weight: 3.8 Kg
- > PB pipe with anti-oxygen barrier  $\varnothing$  6x1 mm
- > 1/2 elementary circuit of 4.2 m
- > Radiant surface: 0.36 m<sup>2</sup>



Example of distribution for Quadrotto 600x600  
with rockwool insulation





# Quadrotto b!klimax+ 1200x600 with polystyrene insulation.

b!klimax+ Quadrotto 1200x600 consists of a metal plafond made of steel 5/10 post-painted, base 24 mm, lowered for 8 mm, right angle, micro-perforated surface with a smooth perimeter of 20 mm. The hydraulic circuit, made of PB pipe  $\varnothing$  6 mm with anti-oxygen barrier according to DIN 4726, is fixed to the panel through an aluminium metal diffuser. Thermal insulation is assured thanks to a moulded, shaped polystyrene layer, thickness 40 mm and density 30 Kg/m<sup>3</sup>.

Quadrotto1200x600 makes for fast and easy installation and can be removed for inspection and maintenance operations, even while the system is working. Thanks to its sound-absorbing micro-perforated surface, Quadrotto 600x600 improves the acoustic comfort of the rooms.

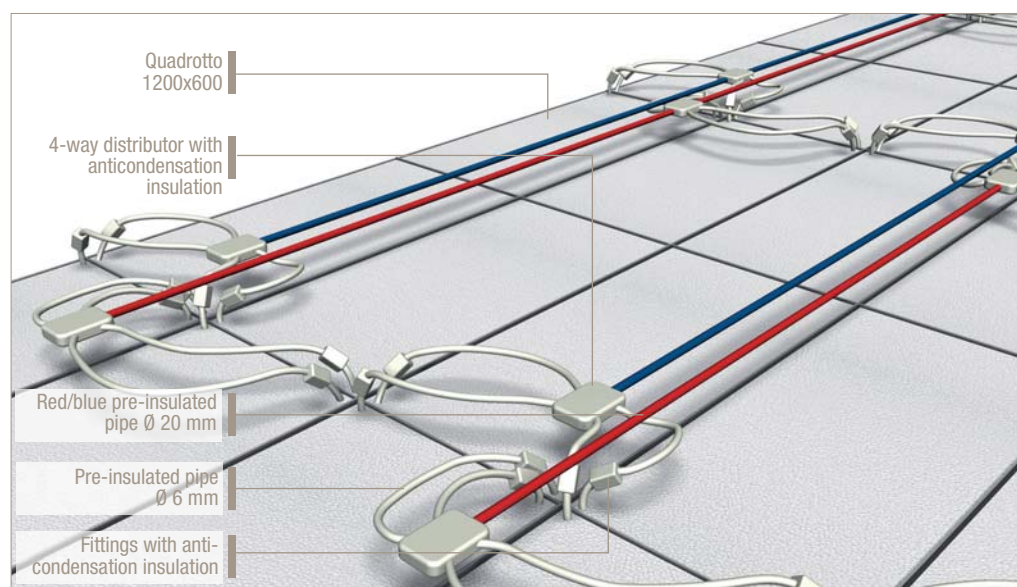
## Dimensions

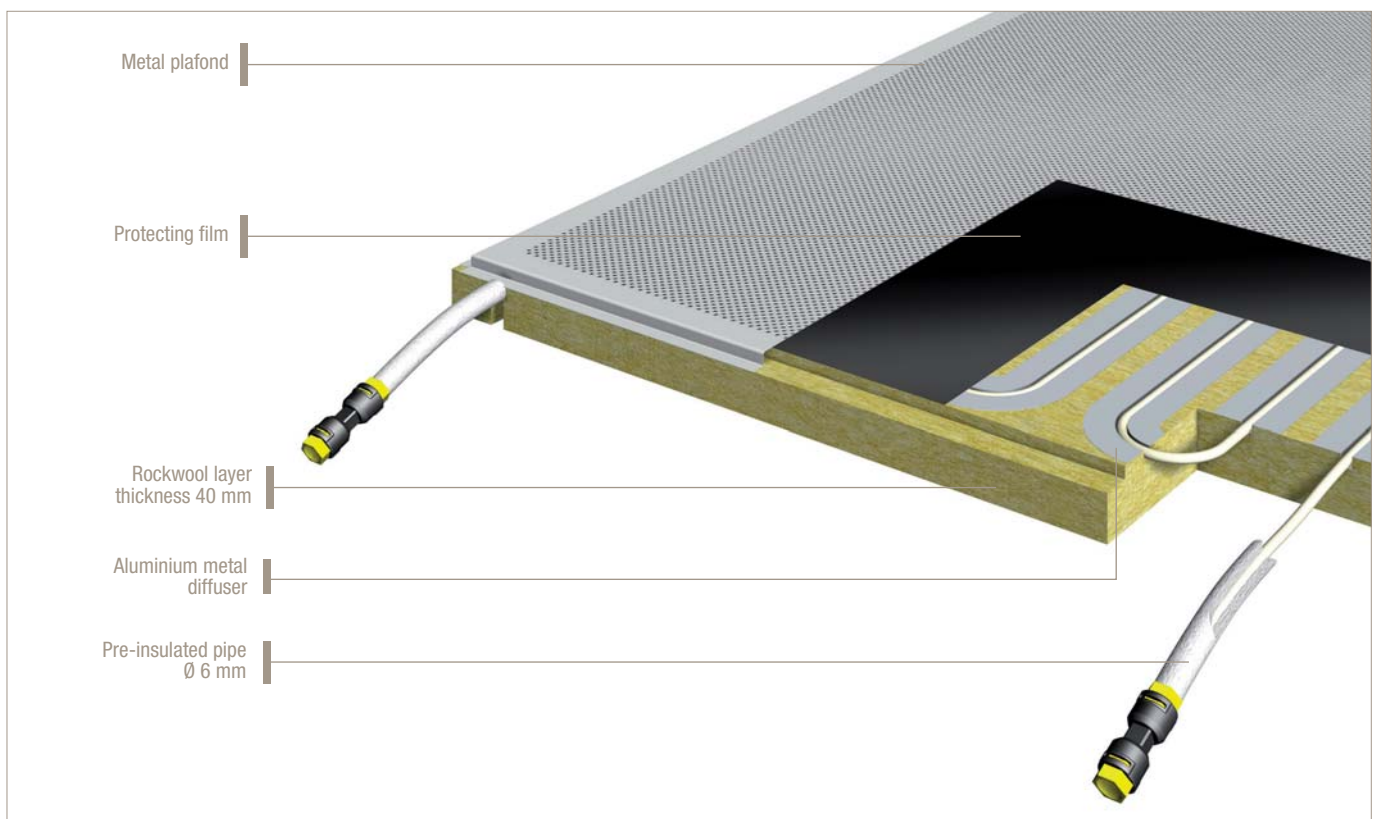
### Quadrotto 1200x600 with polystyrene code 6141200

- > Size: 1200x600x40 mm
- > Polystyrene density: 30 Kg/m<sup>3</sup>
- > Weight: 3.7 Kg
- > PB pipe with anti-oxygen barrier  $\varnothing$  6x1 mm
- > N° 1 elementary circuit of 8.9 m
- > Radiant surface: 0.72 m<sup>2</sup>



Example of distribution for Quadrotto 1200x600  
with polystyrene insulation







# Quadrotto b!klimax+ 1200x600 with rockwool insulation.

b!klimax+ Quadrotto 1200x600 consists of a metal plafond made of steel 5/10 post-painted, base 24 mm, lowered for 8 mm, right angle, micro-perforated surface with a smooth perimeter of 20 mm. The hydraulic circuit, made of PB pipe  $\varnothing$  6 mm with anti-oxygen barrier according to DIN 4726, is fixed to the panel through an aluminium metal diffuser. Thermal insulation is assured thanks to a moulded, shaped rockwool layer, thickness 40 mm and density 165 Kg/m<sup>3</sup>. Rockwool insulation makes it possible to reach high performance in terms of reaction to fire.

Quadrotto 1200x600 makes for fast and easy installation and can be removed for inspection and maintenance operations, even while the system is working. Thanks to its sound-absorbing micro-perforated surface, Quadrotto 1200x600 improves the acoustic comfort of the rooms.

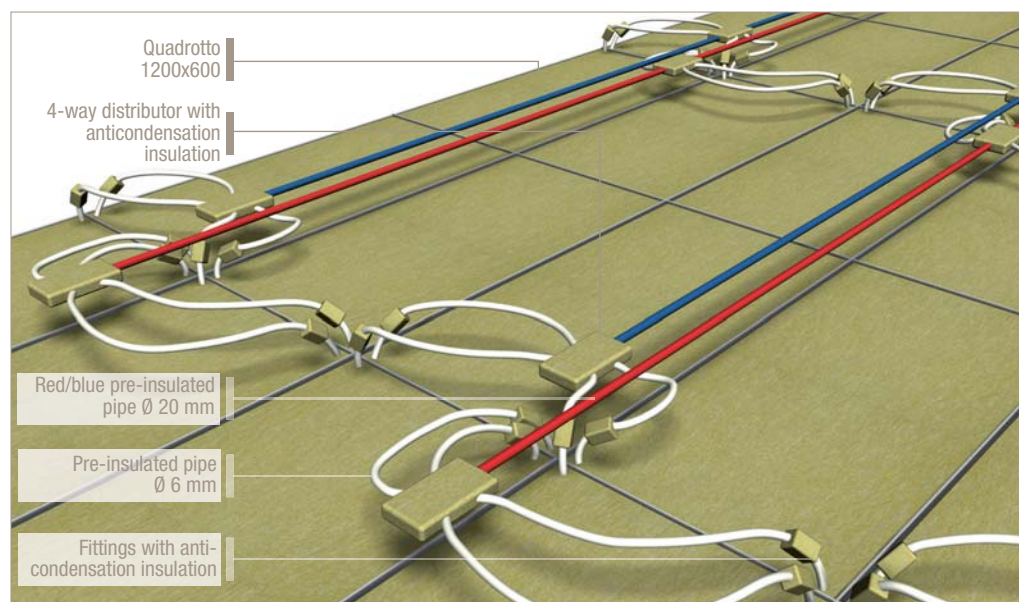
## Dimensions

### Quadrotto 1200x600 with rockwool code 6141210

- > Size: 1200x600x40 mm
- > Rockwool density: 165 Kg/m<sup>3</sup>
- > Weight: 8 Kg
- > PB pipe with anti-oxygen barrier  $\varnothing$  6x1 mm
- > N° 1 elementary circuit of 8.9 m
- > Radiant surface: 0.72 m<sup>2</sup>



Example of distribution for Quadrotto 1200x600  
with rockwool insulation









# Maxi Manifold.

Maxi is the name of the manifolds in b!klimax system, from which main circuits are distributed. Maxi manifolds can be installed both upwards and downwards, and they can be equipped with electrothermal heads for On-Off control on each main circuit. These manifolds are provided with anticondensation shells and accessible filter in order to prevent water impurities from clogging small pipes.

1



## Maxi manifolds code 6302002 - 012

Made of plastic material,  $\varnothing 1\frac{1}{2}$ ", modular assembly, ideal for high flow-rate, equipped with shut-off valves, which can be provided with electrothermal heads controlled by a thermostat, air vent and discharge valves, thermometers on inflow and return pipe, brackets, Y filter and fittings for  $\varnothing 20$  mm pipes. Anti-condensation shells are supplied as standard.

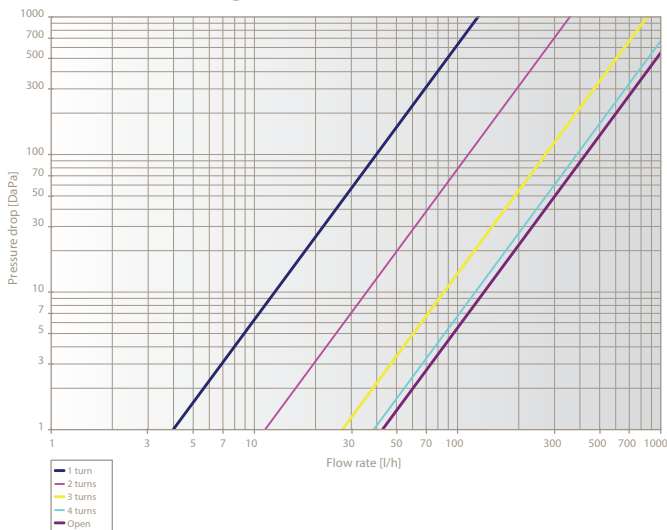
2



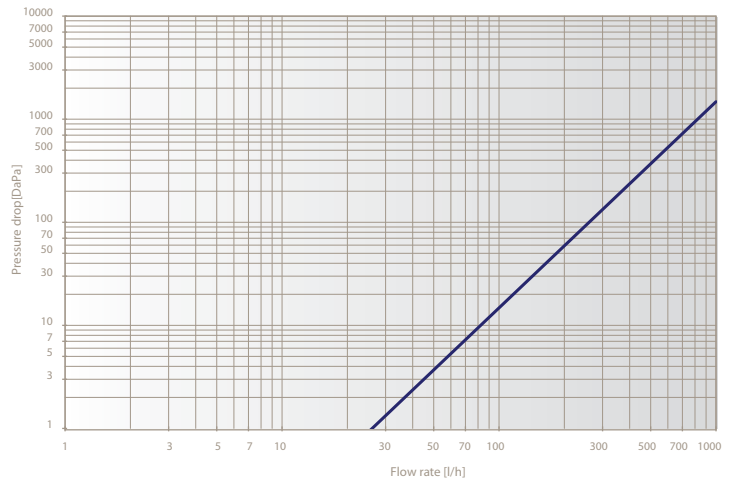
## Electrothermal head with or without micro code 6301010 - 6301020 - 6301025

Electrothermal head with or without limit microswitch to control each circuit through a room thermostat. Protection degree IP 44. It is possible to place the electrothermal head upsidedown. Voltage: 230 V and for heads with microswitch also 24 V.

Head loss for regulation valve



Head loss for on-off valve



Note: balancing for Maxi manifold is limited. The system is SELF-BALANCED.





# Distributors.

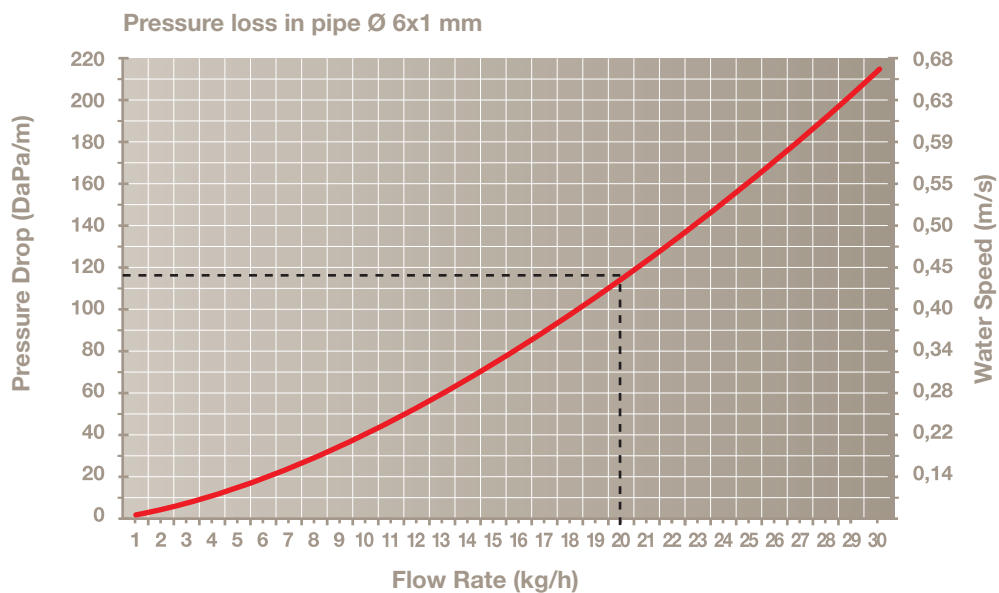
The distributors are an important part of the system. Maxi manifolds are connected to the distributors by pre-insulated polybutylene pipes  $\varnothing$  20x2 mm, while the distributors are connected to the panels by pre-insulated polybutylene pipes  $\varnothing$  6x1 mm.

- 1** **Pair of 8-way open distributors - code 6210040**  
Pair of manifolds made of plastic material, designed to facilitate the connection of b!klimax panel pipes. The distributors are equipped with polystyrene\* anticondensation shells and push-fit pipe fittings for pipes  $\varnothing$  6 mm and  $\varnothing$  20 mm.
- 2** **Pair of 8-way closed distributors - code 6210050**  
Pair of manifolds made of plastic material, designed to facilitate the connection of b!klimax panel pipes. The distributors are equipped with polystyrene\* anticondensation shells and push-fit pipe fittings for pipes  $\varnothing$  6 mm and  $\varnothing$  20 mm.
- 3** **Pair of 4-way open distributors - code 6210060**  
Pair of manifolds made of plastic material, designed to facilitate the connection of b!klimax panel pipes. The distributors are equipped with polystyrene\* anticondensation shells and push-fit pipe fittings for pipes  $\varnothing$  6 mm and  $\varnothing$  20 mm.
- 4** **Pair of 4-way closed distributors - code 6210070**  
Pair of manifolds made of plastic material, designed to facilitate the connection of b!klimax panel pipes. The distributors are equipped with polystyrene\* anticondensation shells and push-fit pipe fittings for pipes  $\varnothing$  6 mm and  $\varnothing$  20 mm.

\*Rockwool anticondensation shells are also available.  
Price list on demand.

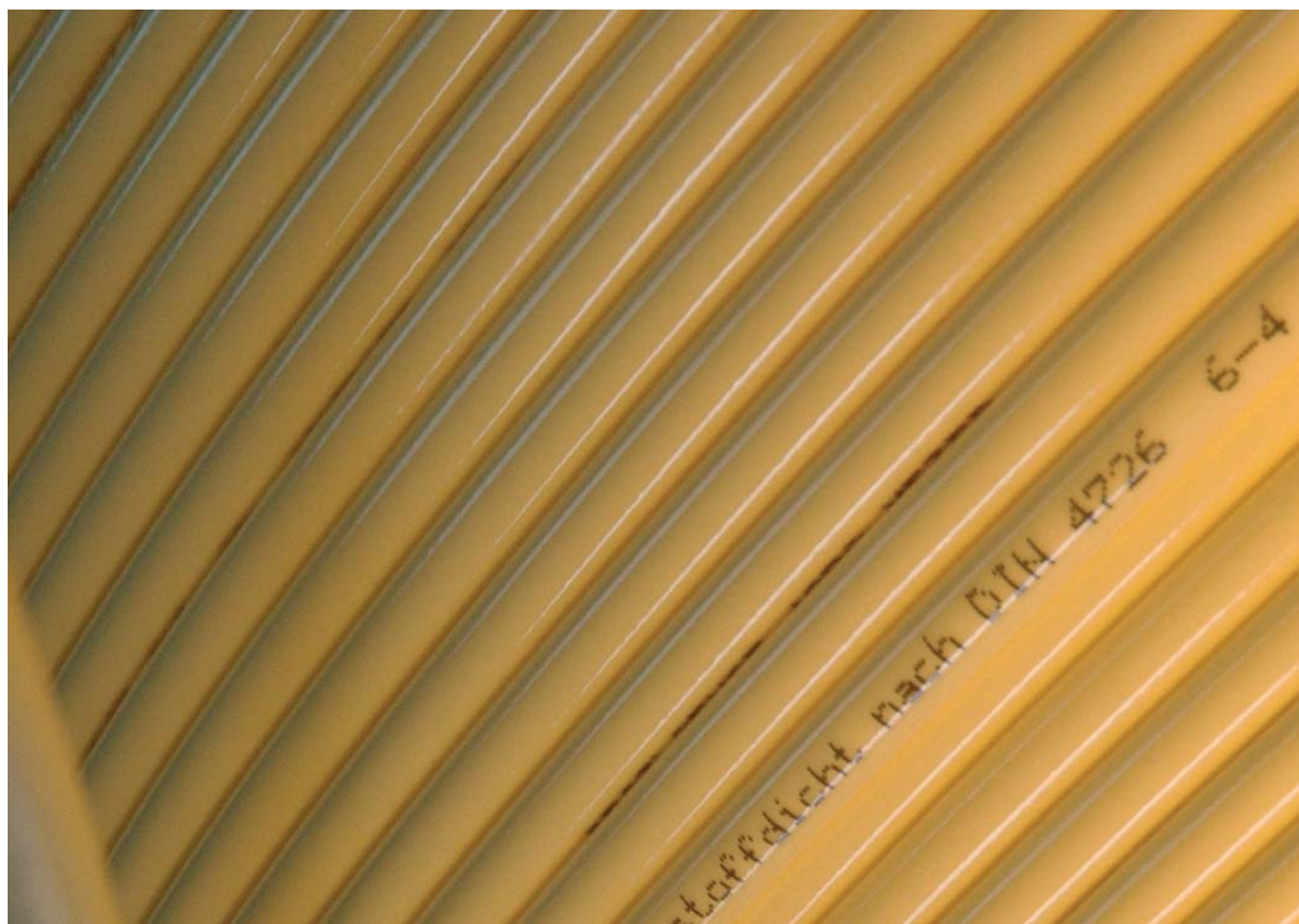


# PB Pipes Ø 6x1. Hydraulic Characteristics.

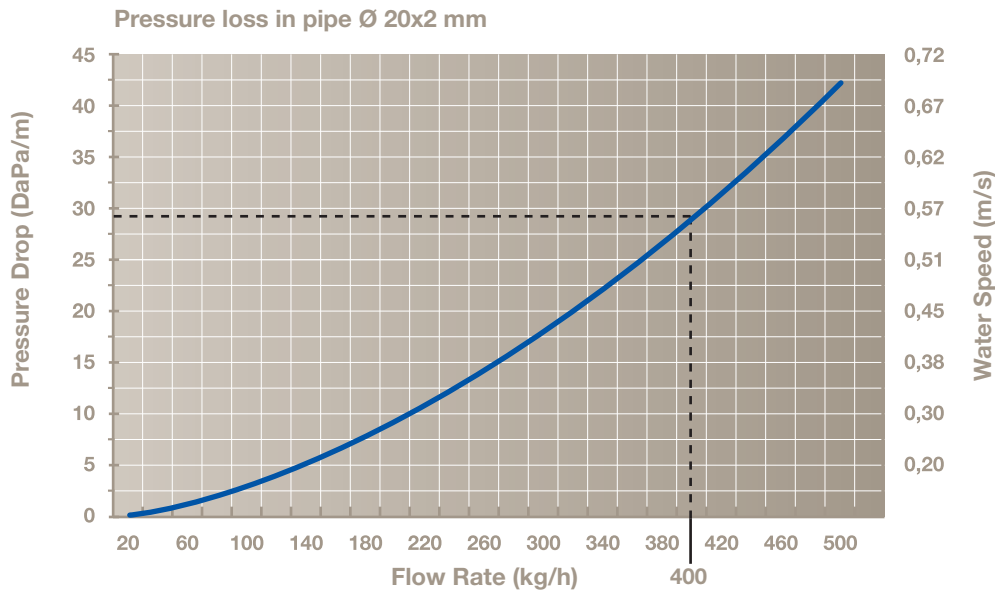


**PB pipe Ø 6 mm**  
**code 6320006**  
PB pipe Ø 6 mm according to UNI  
EN ISO 15876 with anti-oxygen  
barrier conforming to DIN 4726.

**Example:**  
Assuming that a basic circuit (Ø 6  
mm, length 15 m) has a flow rate  
of 20 kg/h, the pressure loss is  
approximately 116 DaPa/m, and the  
total loss is 116 x 15 = 1740 DaPa.



# PB Pipes Ø 20x2. Hydraulic Characteristics.

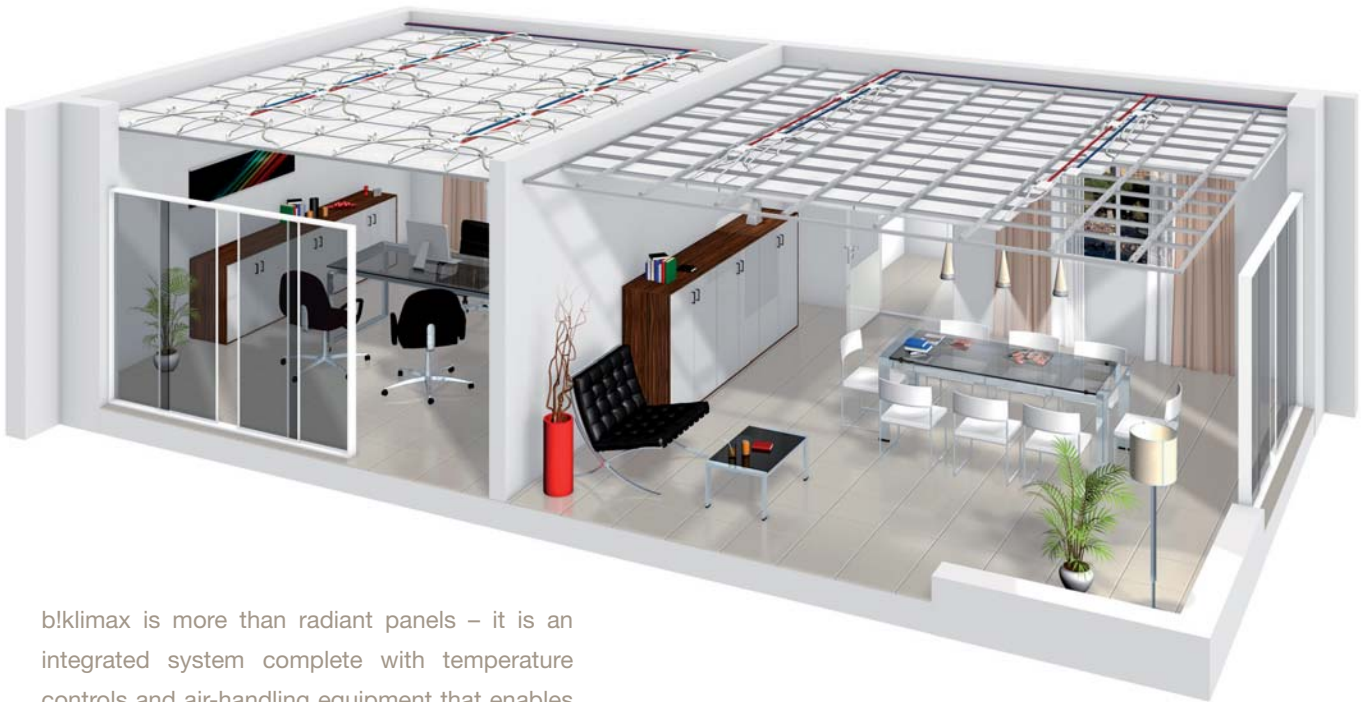


**PB pipe Ø 20 mm**  
**Code 6300620 (red)**  
**Code 6310620 (blue)**  
 PB pipe Ø 20 mm according to UNI EN ISO 15876 with anti-oxygen barrier conforming to DIN 4726 and insulating sheath. It is used to connect the distributors to Maxi manifolds.

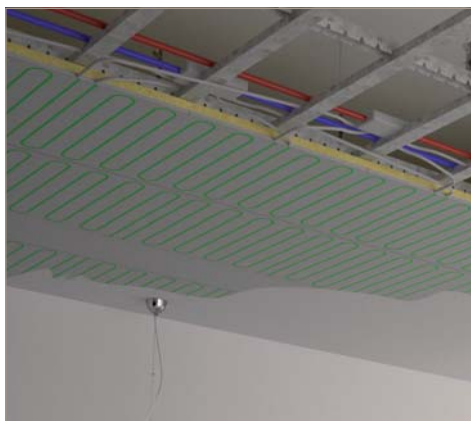
**Example:**  
 By connecting 20 basic circuits through Ø 20 mm pipe using distributors, the water flow rate is 20 kg/h x 20 circ. = 400 kg/h. The chart shows a pressure loss of 28 DaPa/m and, considering a 20-m long pipe, the result is 28 x 20 = 560 DaPa.



# b!klimax: a complete solution.

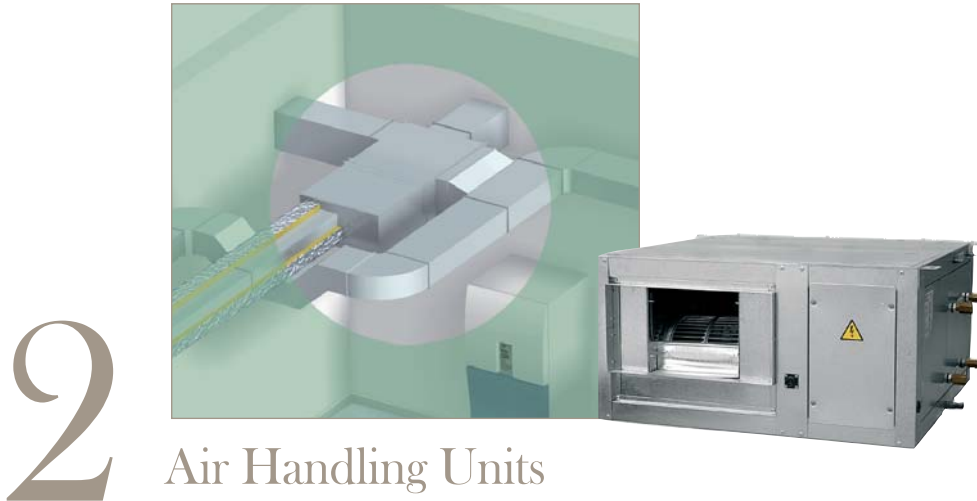


b!klimax is more than radiant panels – it is an integrated system complete with temperature controls and air-handling equipment that enables users to optimize water temperature, room temperature and air humidity.



## 1 b!klimax radiant panels

With their large heat-exchange surface, b!klimax high-efficiency radiant panels regulate the thermal energy in every room, bringing heat or cold according to the season.



## Air Handling Units

RNW dehumidifiers are units for air handling and air renewal, which are used to keep humidity under control and to avoid condensation.



## Wi Control Units

Wi regulation systems consist of expandable controller and temperature/humidity sensors (wire, bus or wireless probes). They manage the system parameters to ensure the highest efficiency.

# Air Handling in Rooms with Radiant Systems.

RDZ radiant systems for floor, ceiling and wall reach their top performance for summer cooling when they are combined with suitable dehumidification, which is an important aspect to keep room comfort and to avoid condensation. That is why RDZ offers a complete range of machines for air renewal and dehumidification, specific for radiant systems and available in different versions according to their application.

Comfort Unit UC 410 HE is a ductable unit for false ceilings in residential applications. It is used for dehumidification as well as air renewal, which is fundamental to meet the requirements for healthy space and people's wellbeing in highly insulated buildings.

## RNW 204 I Wall/embedded dehumidifier - code 7040010



Power consumption	Watt	340
Air flow	m <sup>3</sup> /h	200
Water flow at 15°C	L/h	240
Size (lxhxd)	mm	760x619x207
Weight	kg	45
Dehumidification capacity**	L/24h	24,0
Residential application	m <sup>2</sup>	80-100

## RNW 204 E External/wall dehumidifier - code 7040028



Power consumption	Watt	340
Flow rate	m <sup>3</sup> /h	200
Water flow at 15°C	L/h	240
Size (lxhxd)	mm	800x650x230
Weight	kg	49,6
Dehumidification capacity**	L/24h	24,0
Residential application	m <sup>2</sup>	80-100

## RNW 404 CS Ceiling/embedded dehumidifier - code 7040030



Power consumption	Watt	360
Flow rate	m <sup>3</sup> /h	220
Water flow at 15°C	L/h	240
Size (lxhxd)	mm	711x242x546
Weight	kg	36
Dehumidification capacity**	L/24h	26,6
Residential application	m <sup>2</sup>	100-130



**UC 410 HE Ceiling/embedded dehumidifier / Comfort Unit - code 7040040**



Power consumption	Watt	660
Standard flow rate	m³/h	250
Dehumidification capacity	L/24h	25° / 36** / 57,0***
Air renewal	%	0 / 30 / 50 / 100
Integration to power (sensible)	Watt	1000
Pressure with 250 m³/h	Pa	22
Size (l x h x d)	mm	1106x276x965
Weight	kg	76
Residential application	m²	100-130

**RNW 508 CS Ceiling/embedded duct dehumidifier - code 7040050**



Power consumption	Watt	500
Standard flow rate	m³/h	500
Dehumidification capacity**	L/24h	42
Size (l x h x d)	mm	840x290x600
Weight	kg	47
Static pressure (average speed)	Pa	52
Residential application	m²	150-200

**RNW 600 CS Ceiling/embedded duct dehumidifier - code 7040035**



Power consumption	Watt	900
Standard flow rate	m³/h	600
Dehumidification capacity**	L/24h	62
Size (l x h x d)	mm	690x349x718
Weight	kg	53
Houses and offices	m²	280

**RNW 1000 Duct dehumidifier - code 7030040**



Power supply	V/ph/Hz	230/1~ +N/50
Dehumidification capacity**	L/24h	50,2
Rated power consumption	Watt	950
Air flow	m³/s	0,278
	m³/h	1000
Refrigerant type and quantity		R407C
	kg	1,2
Sound pressure level****	dB[A]	53
Available static pressure of fan	Pa	100
Size (l x h x d)	mm	875x398x761
Weight	Kg	73
Commercial application		

**RTK 1000 Heat recovery unit - code 7030050**



Power supply	V/ph/Hz	230/1~ +N/50
Rated power consumption	Watt	150
Air flow	m³/s	0,278
	m³/h	1000
Available static pressure of fan	Pa	100
Size (l x h x d)	mm	875x398x980
Weight	Kg	47
Commercial application		

\* Performance measured at room temperature of 26°C, RH 55% and inlet water temperature of 15°C - \*\* Room temperature 26°C, RH 65% and inlet water temperature of 15°C \*\*\* Outside temperature of 35°C, RH 50% and inlet water temperature of 15°C - \*\*\*\* A m 1 in free-field atmosphere.

# Wi Control Units.



Complete, expandable systems to control radiant heating and cooling installations for floors, ceilings, and walls.

They include a limited number of components and they are designed for flexibility of operation.

They can control small installations or large multizone systems and centralized energy plants, providing temperature control for every single user.

Thanks to innovative electronic boards, Wi controllers make it possible to use wire room sensors, bus terminals and/or wireless probes in the same installation. Each control unit can be connected with external systems/supervisors, home automation and domotic devices.



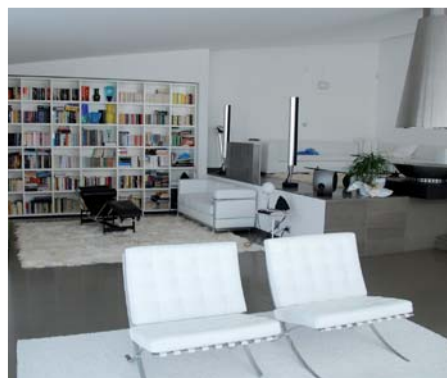
Wi BT Bus Terminal

Room sensor with wire (TA or TA/H) or via bus (Wi-BP Bus)

Wi-WT wireless terminal



# Reference Projects.



Renovated house 270 m<sup>2</sup>, Venice (Italy)

RDZ ceiling heating and cooling with b!klimax system, RNW dehumidifiers and EVO controllers.



# Reference Projects.



Hospital 2.200 m<sup>2</sup>, Brescia (Italy)

RDZ ceiling heating and cooling with bliklimax  
Quadrotto 600x600.



# Reference Projects.



Hotel 725 m<sup>2</sup>, Lecco (Italy)

RDZ ceiling heating and cooling with b!klimax system and EVO controllers.



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