

Chilled beams

Architect

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Use

Lindab's supply air beam Architect provides great freedom of choice in design. A large number of predefined design solutions can be easily applied, in terms of technology, to create customised design solutions with great flexibility, but without affecting the function and performance. One of the advantages is that planning can be done without having to decide on a design. It is also simple to renew the design, if necessary in the future.

Architect is equipped with divergent nozzles to ensure a draft-free indoor climate.

Architect can be equipped with the following features cooling, heating, ventilation, Drypac™ condensation protection, Secura condensation guard, built-in valves and actuators and built-in lighting.

Installation

Architect is a supply air beam for visible installation, which can be mounted on to the ceiling, a wall or suspended. Architect can be supplied with horizontal or vertical connections.

Worth noting

Architect provides great architectonic freedom and has small dimensions, which results in a wide range of applications for the product. Lindab's supply air beams are Eurovent-certified and tested according to EN-15116, EN-14518.



Key figures

Length: 47" – 142"
 Width: 14" – 19"
 Height: 4" – 6"
 Capacity: Cooling effect of up to 5,540 BTU
 Air quantity of up to 138 cfm

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Design

Form and technology working together, without affecting one another.

The Architect concept is unique. The shape and appearance of the product can be varied without any adverse effect on the technology. A unique Architect form can be created for each individual environment. Architect is based on the same technology, irrespective of the model you choose; what distinguishes the models is the design and shape of the product. Lindab offers seven different standard designs, products that should appeal to different tastes and suit different interior environments.

The Architect models make it possible to use different perforations and geometric shapes in the products. The perforations can be slots, or round or oval shapes. The standard perforation is called Slot; other variants can be ordered as plus features. As long as it is technologically possible, your imagination is the only limit to the shapes and models that can be created (see picture 1).

From idea to reality

The technical design of Architect, with its extremely small dimensions, allows you to change its look easily so as to match different interiors. The design and shape, of course, must be within certain basic technical limits for the supply air beam to function properly.



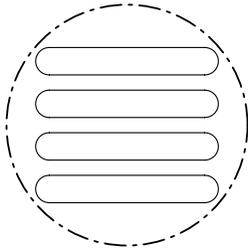
Picture 1. Example of how different types of perforations can be used. The model on the far left is the standard design for Architect Moon. The other perforations can be ordered as plus features.

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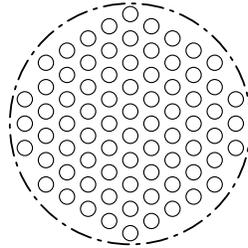
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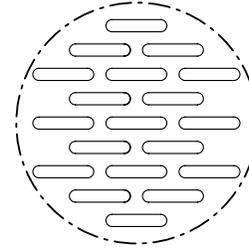
Design options



Line, 0.4" x 2.4"



Dot, 0.2" Ø



Slot, 0.2" x 0.8" standard

Picture 2. Perforation line, dot and slot.

Beam model	Perforation, in	Open area*, %	Width, perforated surface, in
Architect Oval	Slot 0.2" x 0.8"	50	0.1" x 4.6"
	Line 0.4" x 2.4"	33	0.1" x 5.4"
	Dot 0.2" Ø	33	13.4"
Architect Wave	Slot 0.2" x 0.8"	50	9.1"
Architect Moon/ Wing	Slot 0.2" x 0.8"	50	0.1" x 4.6"
	Slot 0.2" x 0.8"	33	13.4"
	Line 0.4" x 2.4"	33	13"
Architect Square	Dot 0.2" Ø	33	13.4"
	Slot 0.2" x 0.8"	50	0.1" x 4.6"
	Slot 0.2" x 0.8"	33	13"
Architect Facet	Line 0.4" x 2.4"	33	0.1" x 5.4"
	Slot 0.2" x 0.8"	50	0.1" x 52 + 6.7"
	Line 0.4" x 2.4"	33	0.2" x 2.4"

* % of perforated surface

Table 1. Architect's perforation options.

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Design options



Architect Wave



Architect Oval



Architect Square



Architect Box



Architect Facet



Architect Wing

Picture 3. Architect provides great freedom of choice in design. Architect Moon is shown on Picture 1, 4, 6, 7 and 8.

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Function

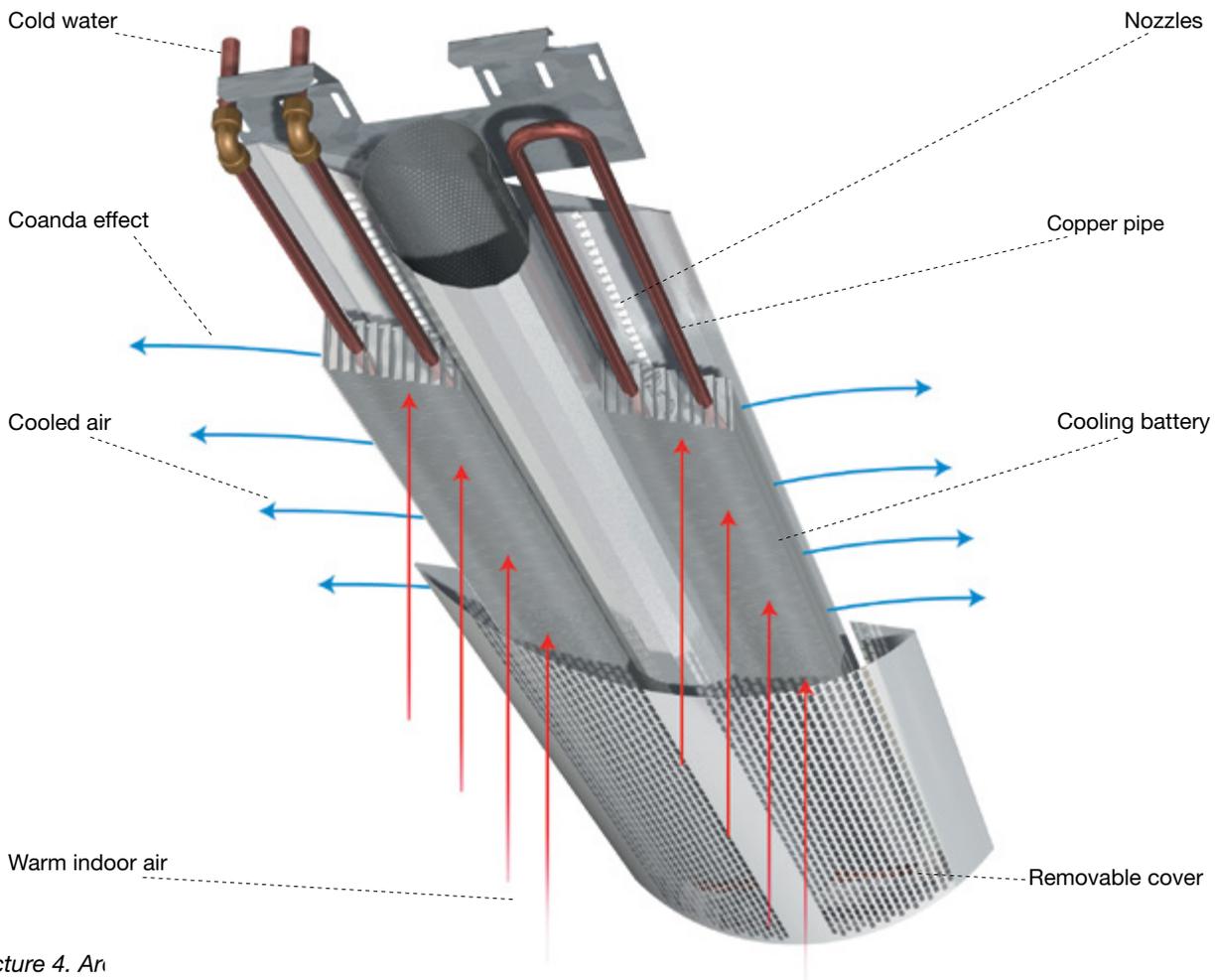
Powerful function in an extremely small format

Architect is based on the induction principle. Ventilation air with a given dynamic pressure is discharged through specially formed nozzles into a dispersal zone, thereby creating a low static pressure. The low static pressure causes the warm air from the room to be drawn through the battery. The volume of the warm indoor air is 4 to 5 times that of the ventilation air. The air is cooled as it passes through the battery, which consists of aluminium ribs with copper pipes filled with cold running water. The heat of the room is absorbed through the aluminium ribs and then transferred through the copper pipe to the water circuit and goes further to a central cooling unit (see picture 4).

Despite the product's small external dimensions, the design allows for large volumes of air and extremely efficient cooling. The nozzles, which discharge the ventilation air, are designed to obtain the Coanda effect. Due to the design, the air starts to adhere to the duct in the nozzle, which means that the Coanda effect is maintained close to the ceiling. Since the air is directed slightly upwards, this important aero-technical function is also achieved in the suspended models.

The water pipes are made of copper. Nevertheless the water should be oxygen-free, to prevent corrosion.

A heating function can also be obtained from an additional heating pipe in the battery.



Picture 4. An

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Installation examples

Productive indoor climate in different interiors

The principle behind Architect is that the cooled or heated air spreads along the ceiling. Through induction, the air from the room is drawn back into the central part of the beam, to be cooled or heated. This feature keeps the room well ventilated. Architect is equipped with angled nozzles that distribute the air over a wide area. This results in considerably lower air velocities in the room than with traditional nozzle technology.

Architect's flexible shape and appearance allows the supply air beams to be fitted easily in to a variety of interiors and to appeal to different styles and tastes. This chapter includes several different suggestions for interiors. When installed with a horizontal air and water connection, the cover of the product can be extended to conceal the connection pipes. The cover can be manufactured in lengths of up to 147".

Where the installation is directly on to the ceiling, the smallest separation between the beam and the nearest wall is 4" for all models except Architect Box, which requires 20". For suspended installation, if the beam is placed less than 40" from the wall, some of the air from the side facing the wall will flow back over the beam and in towards the room.

The technology used in Architect also enables installation on to the wall. Pictures 6 and 7 show several different wall installations. The technology and function work regardless of whether the installation is vertical or horizontal. If vertical installation is required, this should be specified in the product specification.



Picture 5. Architect Moon installed on a ceiling.



Picture 6. Architect Moon installed vertically on a wall.



Picture 7. Architect Moon installed horizontally on a wall.

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Installation examples

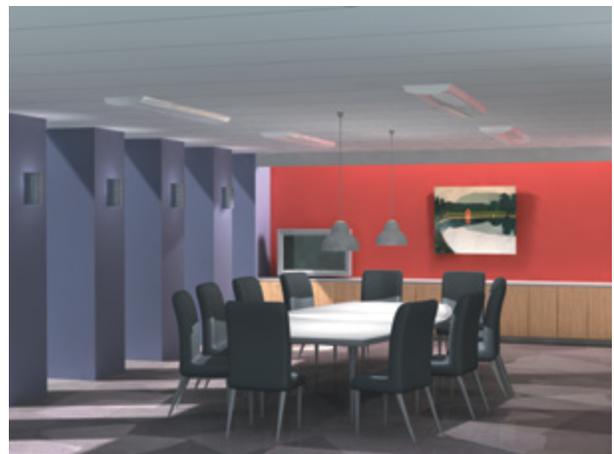
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Picture 8. Architect Moon in a restaurant environment.



Picture 9. Architect Facet in a waiting room / lobby.



Picture 10. Architect Win in a conference room.

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Data

Variants

Architect is available for direct installation on to a ceiling, a wall or suspended.

Lengths: Architect is available in lengths from 47" – 142" in steps of 4".

Water connection: The water connection is horizontal or vertical, with outer diameter of 0.6".

Air connection: The air connection is horizontal or vertical, 4" Ø or 5" Ø.

Design: Architect can be supplied in different shapes and with different cover perforations (see table 1). Where a design or a perforation is required, which differs from the standard models, please contact Lindab.

Nozzle angle: The nozzles can be ordered with different angles: 0°, 16° or 30°. The standard angle is 30°.

Surface treatment: Architect is manufactured as standard from enamelled sheet metal, color white, RAL 9010.

Airflow control: The product has a preset pressure drop value, so on-site adjustment is not necessary. A prerequisite is that the building's duct system has a relatively low-pressure drop compared to that of the product. Where a damper is desired, you can order a balancing damper.

Plus features

Factory preinstalled.

Heating: A heating function can also be obtained by an additional heating pipe in the battery. Available for connection options A1, A2, B1 and B2.

Drypac™: Anti-condensation treated cooling batteries, which enable water temperatures below the dew point without dripping.

Wall installation: Architect can also be mounted horizontally or vertically on to a wall. Contact Lindab for more detailed information.

Extended cover: Where it is installed with a horizontal air and water connection, the product's cover can be extended to conceal the connection pipes (see figure 11, 12). The cover can be produced in lengths of up to 147". The extended underside also includes wall or ceiling attachments.

Integrated valve and actuator: A control valve, with variable Kv value, and an actuator can be pre-installed in the product.

Color: For special colors and other surface finishes, for example, galvanized and powder coating. Contact Lindab for more information.

Lighting: The product can be equipped with type-approved light fittings. Refer to the chapter Lighting.

Air vent: Air vents are not supplied as part of the standard package, but they can be ordered to be pre-installed.

Accessories

Delivered separately.

Cover plate: It is delivered in two versions. With ceiling attachment or with attachment for both ceiling and wall (see figures 13 to 14).

Color

Architect is available as standard in white, RAL 9010, gloss value 30. Other colors may be ordered specially.

Cooling effect, Architect

Drypac™, condensation protection

All Architect models can be ordered with the Drypac™ plus feature, condensation protection consisting of perlite (volcanic stone) that is applied to the fin surfaces. Drypac™ has properties that enable it to function at a supply temperature 39.2° F below the dew point, for continuous operation, and 41 to 46.4° F below the dew point for limited. Drypac™ provides both an increased effect output and increased security against condensation drips. At a working temperature above the dew point, output is reduced by 17%, but when the working temperature is below the dew point, there is no reduction in output. This means that the effect is highest when the need is greatest.

For more information about Drypac™, refer to the chapter Drypac™.

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Couplings & connections

Architect is supplied in lengths from 47" – 142", in steps of 4". The connection dimension is 0.6" for the water and 4"Ø or 5"Ø for the air for Architect Moon, Wing and Facet.

Architect is available with a large number of coupling options. This is how to find the designation, for the coupling option you require for Architect:

Examples of designations

Step 1.

Indicate the position for the ventilation connection.

Step 2.

Indicate the position for the pipe connection.

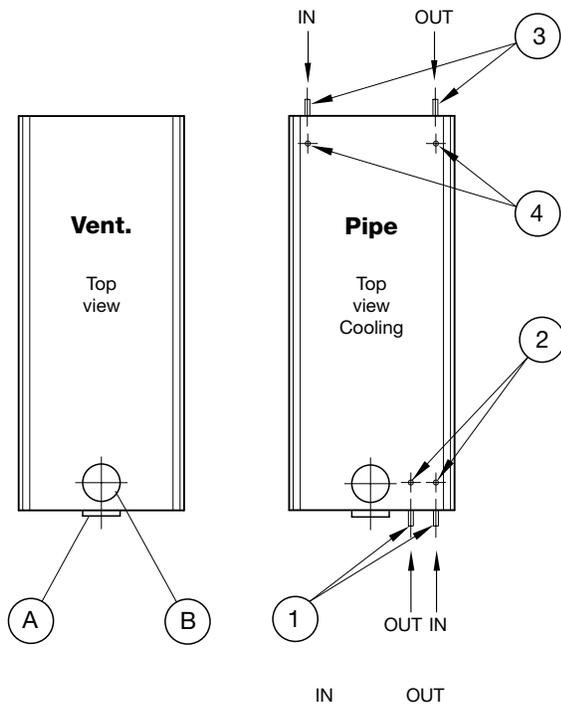


Figure 1. Coupling and connection options.

Below are examples of common coupling options: Type A1 has a horizontal air connection at the end, and a horizontal pipe connection at the same end of the beam.

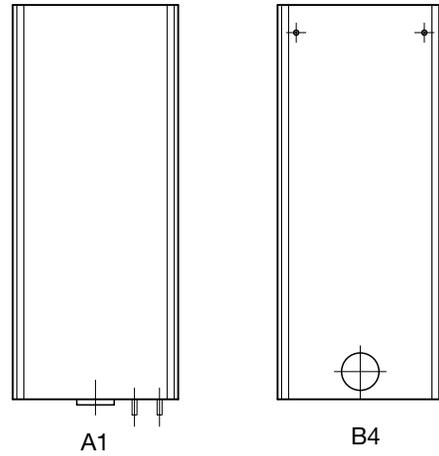
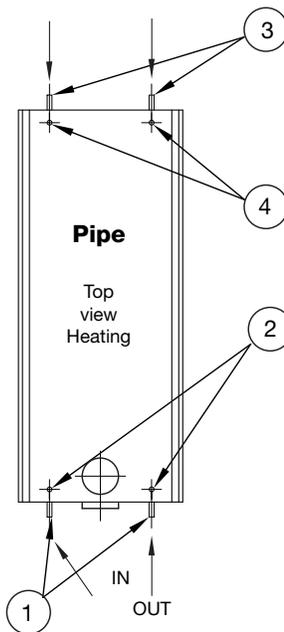


Figure 2. Coupling options A1 and B4.



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Connection dimensions, 4"Ø cooling (in)

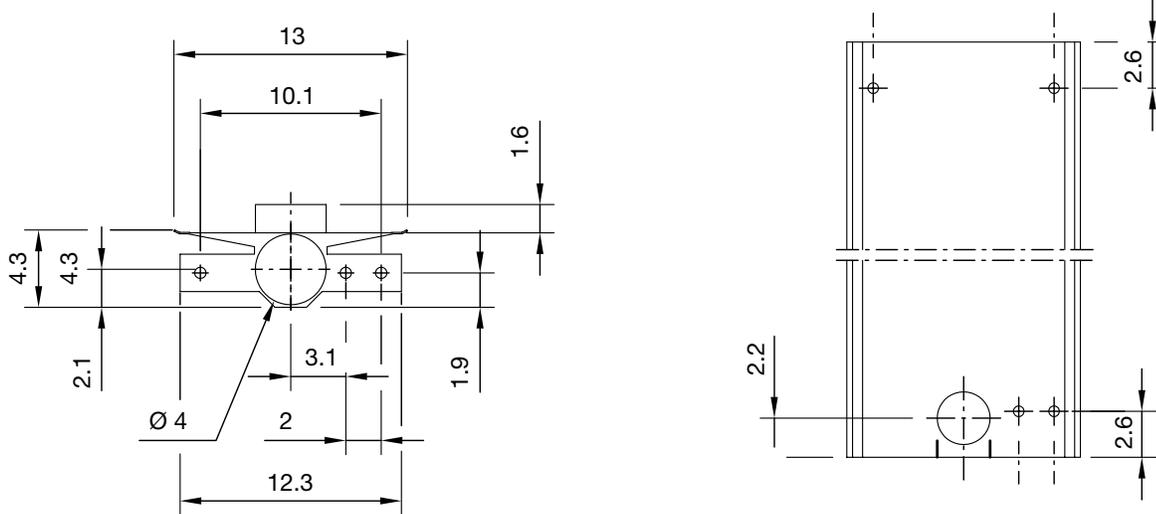


Figure 3. Architect 4"Ø, cooling. Dimensions for the parts. Total width and length for the respective models vary (see table 15).

Connection dimensions, 4"Ø heating (in)

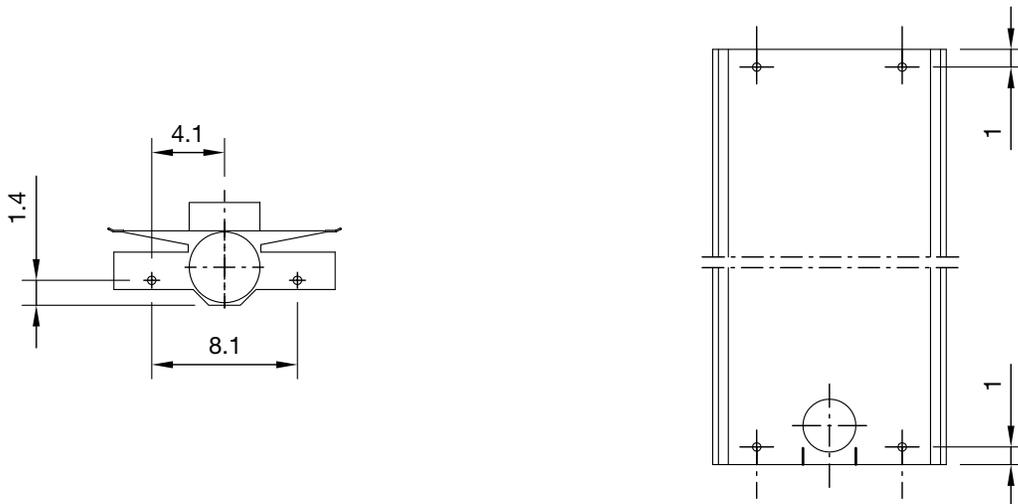


Figure 4. Architect 4"Ø, heating. Dimensions for the parts. Total width and length for the respective models vary (see table 15).

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Suspension, 4"Ø connection (in)

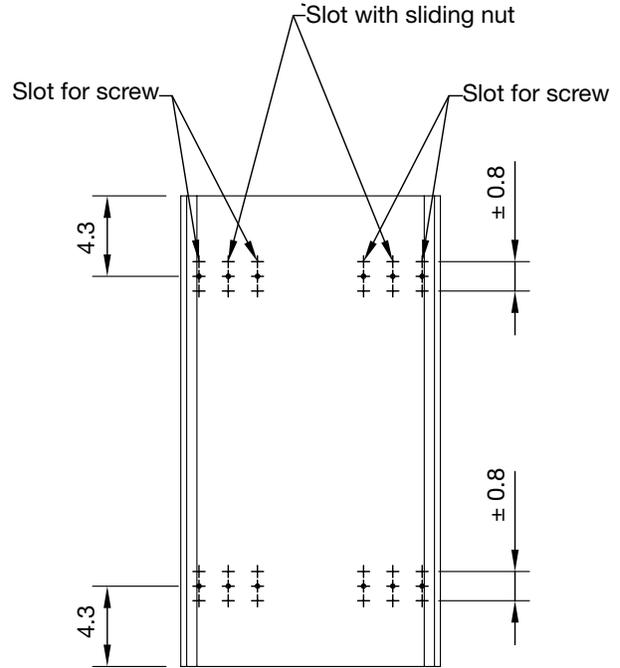
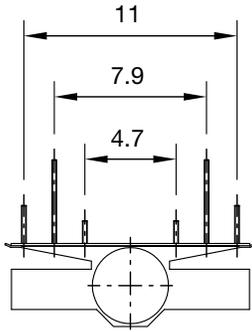
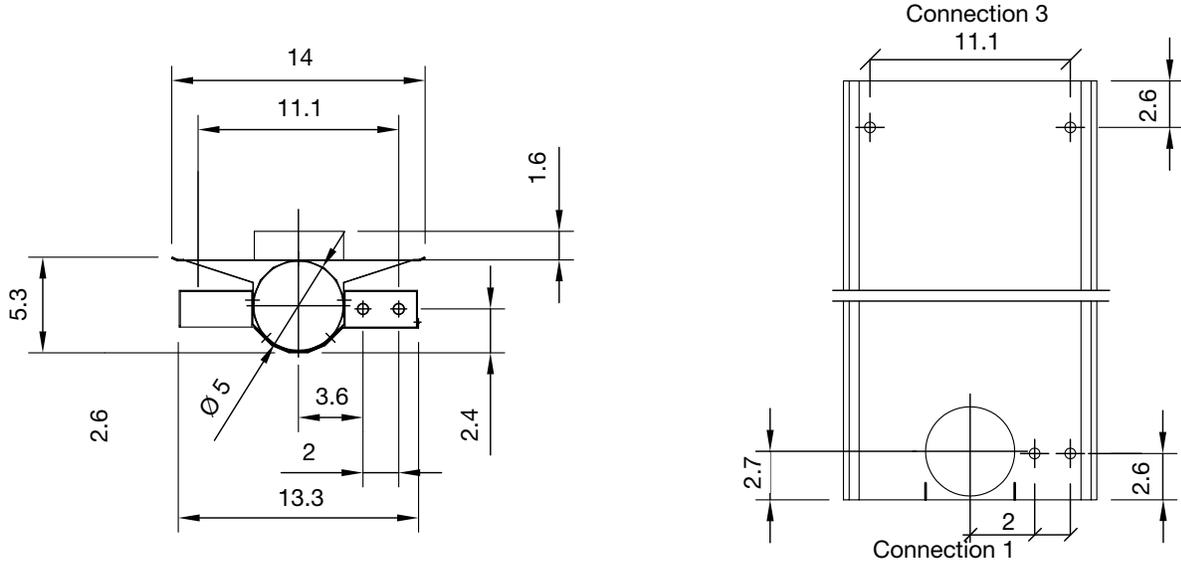


Table 5. Architect 4"Ø, suspension / dimensions.

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Connection dimensions, 5"Ø cooling (in)



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Figure 6. Architect 5"Ø, cooling. Dimensions for the parts. Total width and length for the respective models vary (see table 15).

Connection dimensions, 5"Ø heating (in)

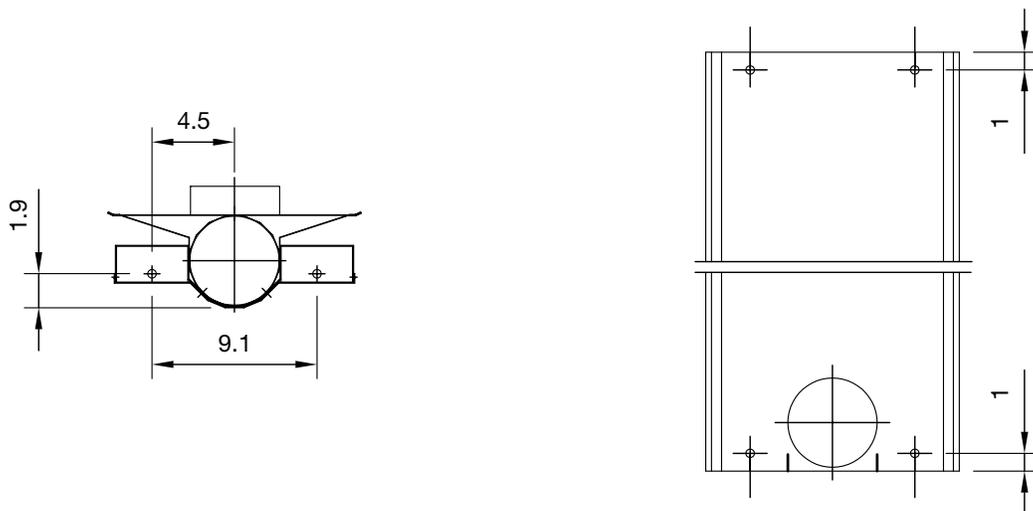


Figure 7. Architect 5"Ø, heating. Dimensions for the parts. Total width and length for the respective models vary (see table 15).

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Suspension, 5"Ø connection (in)

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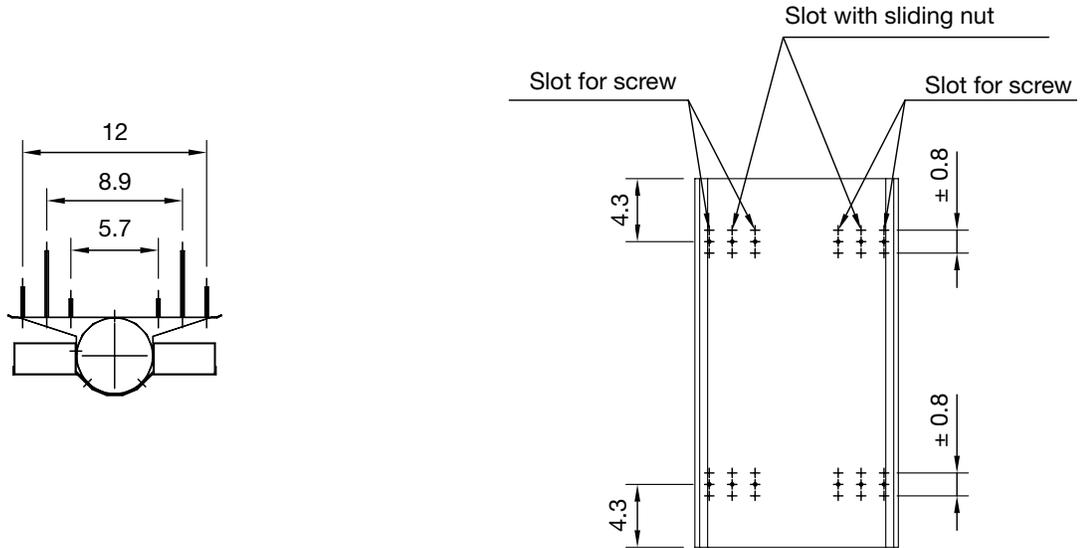


Figure 8. Architect 5"Ø, suspension / dimensions.

	Architect 4"Ø / 5"Ø
Weight, kg	10.5
Water content, cooling l/m	0.65
Water content, heating l/m	0.33
Copper pipes, quality	SS/EN 12449
Pressure class	PN10

Dimensions, weight & water content

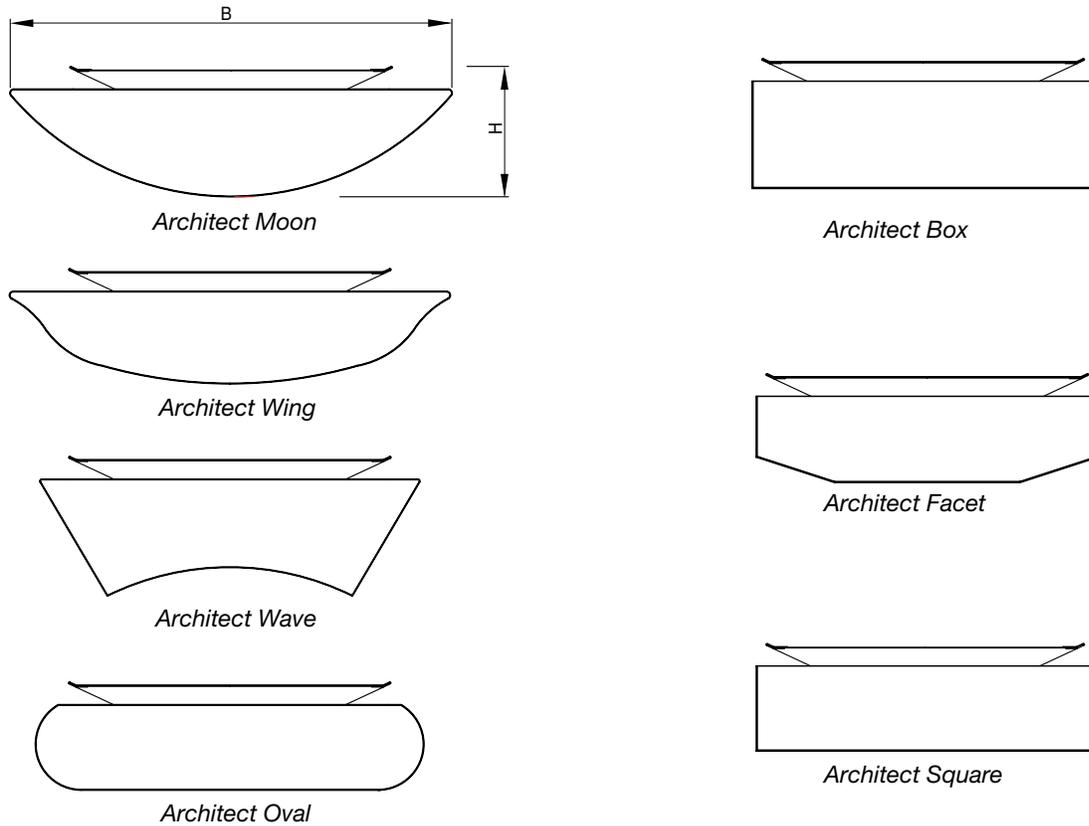


Figure 9. Architect's different versions.

Model	Ø	Width, in	Height, in	Product length undersize, in	Weight, lb/ft	Water content, gal/in
Moon	4	17.8	5.2	0*	7.1	0.05
Moon	5	19.3	5.9	0*	7.1	0.05
Wing	4	17.8	4.7	0*	7.1	0.05
Wave	4	15.3	5.6	0*	7.1	0.05
Oval	4	15.7	4.4	0*	7.1	0.05
Oval	5	17.6	5.4	0*	7.1	0.05
Box	4	13.8	5.2	- 0.3**	7.1	0.05
Facet	4	13.8	4.4	- 0.3**	7.1	0.05
Facet	5	14.8	5.4	- 0.3**	7.1	0.05
Square	4	13.8	4.4	- 0.3**	7.1	0.05

* The outer cover extends 0.2" beyond the end edges on each side. ** The end edges are folded over the cover.

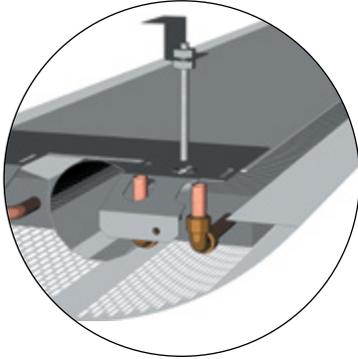
Table 15. Dimensions, weight and water content of the outer cover. Architect's total length is the ordered length minus undersize.

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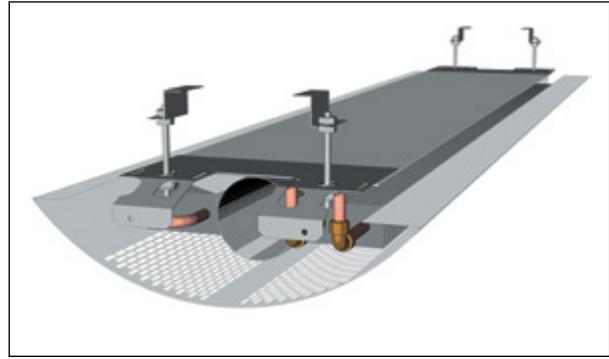
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Installation examples

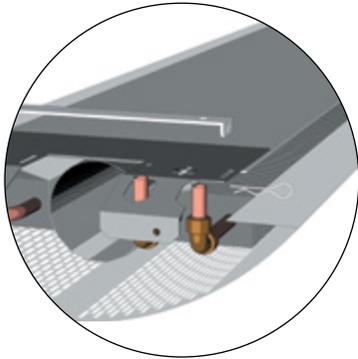
Architect is usually installed on to the ceiling or suspended from it. Pictures 11 and 13 show the beam during installation. Pictures 12 and 14 show a complete installation.



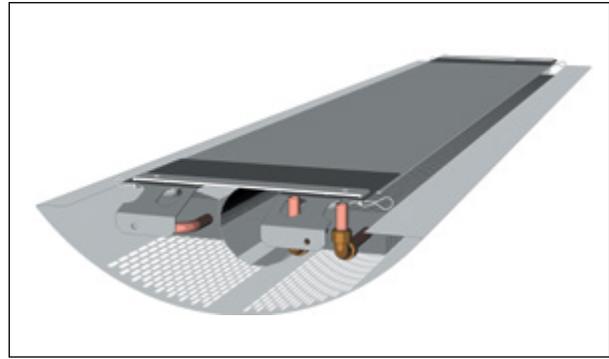
Picture 11. Suspension with screws or threaded rods.



Picture 12. Architect installed with threaded rods that are screwed into a nut that can slide lengthwise in the beam.



Picture 13. Suspension with brackets.



Picture 14. Architect installed with cotter pins that are inserted into brackets attached to the ceiling.

Extended cover / Cover

For installation with horizontal air and water connections, the connection pipes can be concealed, using one of four alternative options, depending on the placement and attachment options.

Options:

- 1.- Extended cover with wall attachments (see fig. 11).
Maximum length: 147".
- 2.- Extended cover with ceiling attachments (see fig. 12).
Maximum length: 147".
- 3.- Cover with ceiling attachments (see fig. 13).

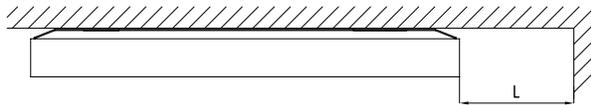


Figure 10. Ordered length.

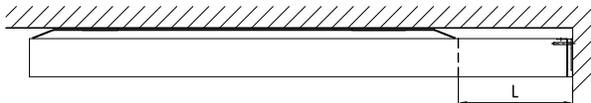


Figure 11. Extended cover with wall attachments.

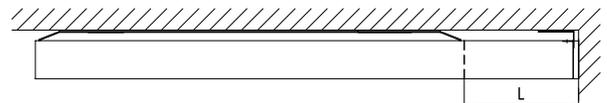


Figure 12. Extended cover with ceiling attachments.

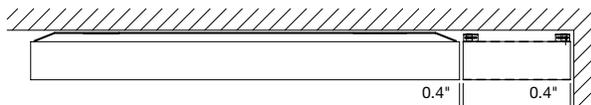


Figure 13. Cover with ceiling attachments.