



# Lindab **Professor XP**

Active chilled beam



# Active chilled beams

# Professor XP

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# Active chilled beams

# Professor XP



Picture 1. Integrated Active Chilled Beam Professor XP recessed in suspended ceiling.

## Use

Lindab's high performance active chilled beam Professor XP provides great freedom for the installation, as its inset height is lowest in the market, with an overall height of only 120 mm.

Professor XP is equipped with a pre-set air distribution pattern, which provides a draft-free indoor climate.

Professor XP can be used for cooling, heating and ventilation. Professor XP can be furnished with the following features:

Cooling, heating, ventilation, Regula Secura condensation guard, built-in 2-way water valves and thermal actuators, built-in extract air valve, etc.

The condensation protection (Regula Secura) and different connect cards (Regula Connect) can all be built into the Professor XP. Room regulator (Regula Combi), presence sensor (Regula Pulse) can be integrated into Professor XP front plate.

LED lighting can be integrated on request.

It offers many possibilities and great flexibility.

## Installation

Professor XP is available for both recessed and exposed installation.

Best in: Offices, hotels, hospitals, schools, banks, etc.

## Worth noting

- 3 different air distribution patterns available: short (default), medium and long to provide a draft free indoor climate for every room.
- Due to its very low height of 120 mm, the beam can be mounted in cramped spaces, which leads to great flexibility.
- The beam is available with different battery configurations which always allow the optimal capacity output with energy optimization.
- The beam can be easily integrated/used in a Pascal water system to enable VAV/DCV.
- Lindab's active chilled beams are Eurovent-certified and tested according to EN-15116.



## Key figures

|                                    |                          |   |
|------------------------------------|--------------------------|---|
| <b>Height</b>                      |                          | <b>120 mm</b>                             |
| <b>Width</b>                       |                          | <b>450 and 600 mm*</b>                    |
| <b>Nominal product length</b>      | <b>L<sub>nom</sub></b>   | <b>1200 to 3600 (in steps of 100) mm*</b> |
| <b>Air connections</b>             |                          | <b>1x100 or 2x100 mm</b>                  |
| <b>Water connections</b>           |                          | <b>12 mm</b>                              |
| <b>Primary air flow rate</b>       | <b>q<sub>a</sub></b>     | <b>7 to 80 l/s</b>                        |
| <b>Total-cooling capacity</b>      | <b>P<sub>t</sub></b>     | <b>up to 2200 W</b>                       |
| <b>Total-heating capacity</b>      | <b>P<sub>t</sub></b>     | <b>up to 4050 W</b>                       |
| <b>Static nozzle pressure loss</b> | <b>Δp<sub>stat</sub></b> | <b>30 to 120 Pa</b>                       |

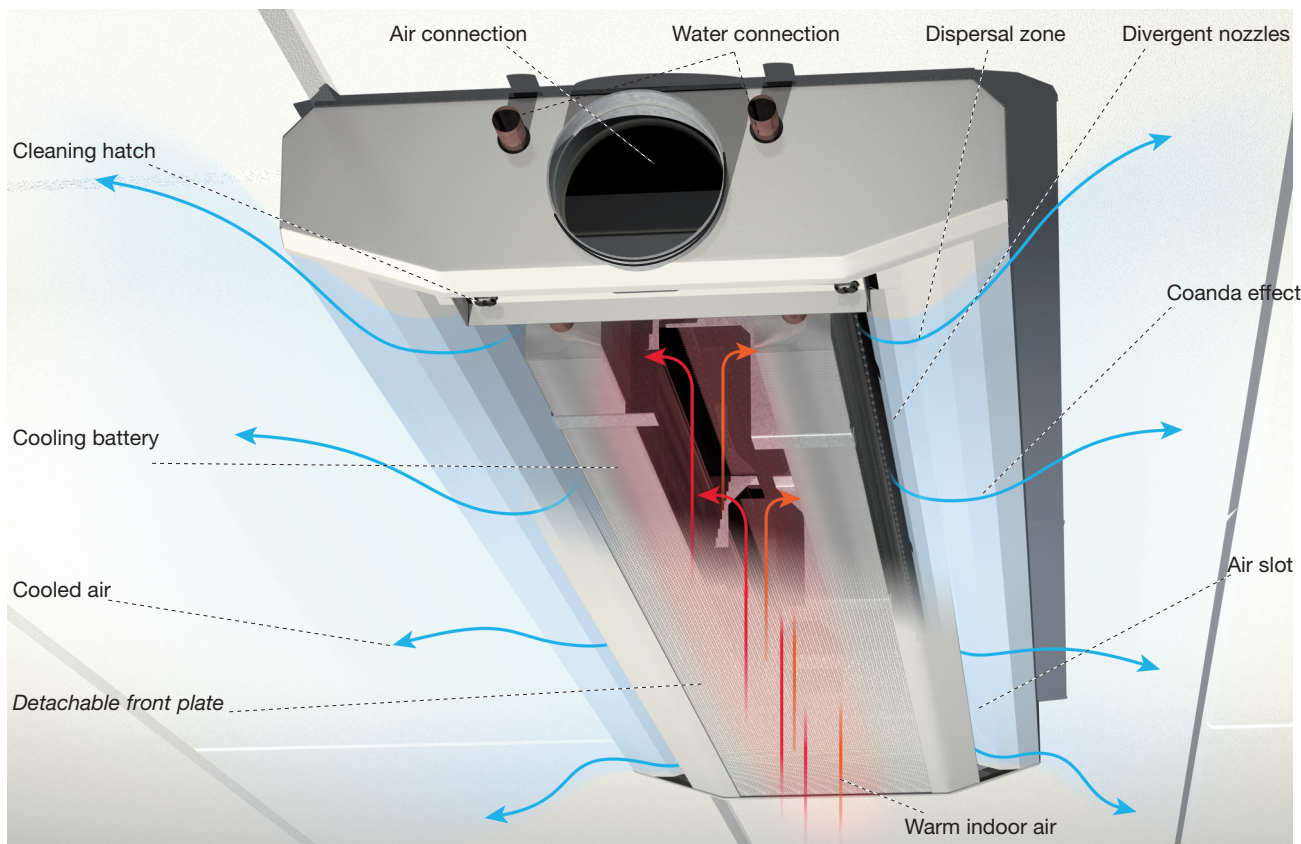
Table 1. Professor XP key figures.

\*Width and length depending on ceiling adaption.



# Active chilled beams

# Professor XP



Picture 2. Professor XP is based on the induction principle.

## Optimal functions

Professor XP's function is based on the induction principle.

Ventilation air at a given dynamic pressure is released through specially formed nozzles into a dispersal zone, thereby creating a low static pressure. This low pressure causes the warm air from the room to be sucked towards the ventilation air passing through the battery. The volume of the warm indoor air is 3 to 5 times that of the ventilation air.

The air is cooled (or heated) as it passes through the battery, which consists of aluminium ribs with copper ducts filled with cold (or warm) running water. While cooling, the heat of the room is absorbed through the aluminium ribs and transferred through the copper pipe to the water circuit and then goes further to a central cooling unit (see Picture 2).

Despite the small external dimensions of the product, the construction makes it possible to achieve a high cooling capacity.

The nozzles discharging the ventilation air are designed to maintain the Coanda effect, i.e. the adhesive capacity of the air in the duct, with a start in the nozzles. The air then follows the side of the duct towards the ceiling. The side of the beam is shaped to maintain the Coanda effect across the ceiling of the room.

## The new battery concept

The new, patent pending, modular battery concept from Lindab, now has been integrated in the Professor XP. It offers 4 different performance values for 2 pipe system (cooling or heating only) with variants: min, med, high or max; and provides different cooling capacities to suit your needs.

If Professor XP is to be used in a 4-pipe system (cooling and heating), these 4 variants can be combined with additional variants for heating.

This provides a unique possibility to e. g. reach different capacity demands with the same product length and an architectural uniform appearance in rooms.

To always get the Professor XP which suits to your needs, use e. g. the Waterborne Selector in [LindQST.com](http://LindQST.com)

- Product performance tailored to your needs
- Avoid oversizing and reduce operating costs
- Choose the most cost-effective solution
- No waste of material and weight



# Active chilled beams

# Professor XP

## Construction

### Maximum accessibility

For best possible accessibility for cleaning, suspension, adjustment or maintenance, the whole underside of the Lindab Professor XP can be dismantled. Where the beam is equipped with built-in valves and Regula control devices, these are also accessible for adjustment and maintenance from below. The beam is suspended and adjusted before the underside is put in place.

The product can be ordered so the volume of air can be varied on both sides (air boost). This is achieved by using different plugs on the nozzles.

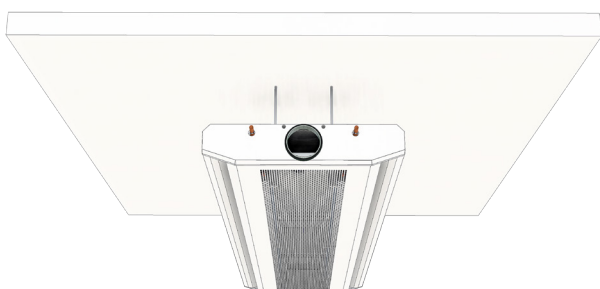
The water pipes are made of copper. Nevertheless, the water must be oxygen-free to prevent both corrosion and noise in the system.

NB! When the airflow is adjusted, the maximum airflow at a given pressure is limited by the number of nozzles. You should consider your future needs and possibly choose a Professor XP with more plugged nozzles (air boost) as early as when you place your order.

The construction is patented; all tests are conducted according to European standard EN 15116. Professor XP is certified by Eurovent.



Picture 3a. Professor XP F directly mounted to the ceiling.

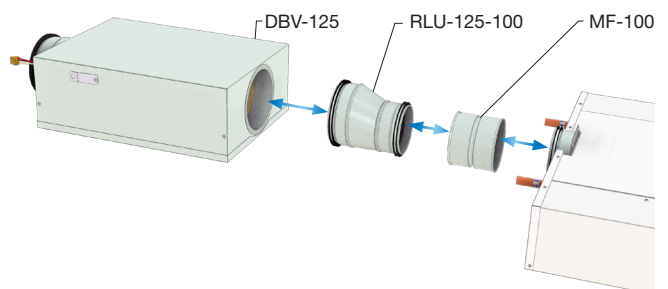


Picture 3b. Professor XP F exposed installation.

## Lindab Pascal Water Solution VAV/DCV combined with active chilled beams

For an extra energy- and cost saving and environmentally friendly ventilation and cooling system, the Lindab Pascal Water solution should be applied. The Pascal solution will optimise the ventilation, cooling, heating and even lighting for a perfect indoor climate at the lowest running cost by combining the active chilled beam with VAV (Variable Air Volume) or DCV (Demand Controlled Ventilation) technique.

Please refer to: [Pascal Water Solutions](#)

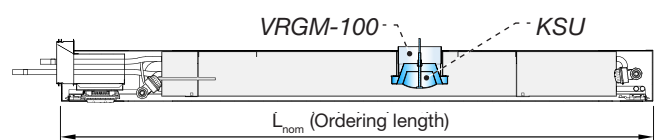


Picture 4. Connecting a Professor XP I-60 with a DBV-125 volume flow regulator using MF-100 and RLU-125-100. The Lindab Safe® system makes the connection very easy with no need of tools. Alternatively a flexible hose can be used.

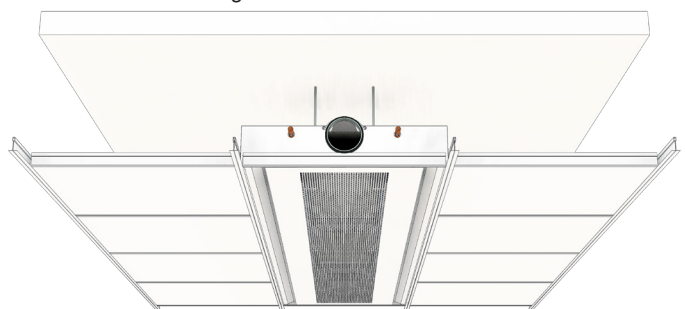
## Extract air valve KSU ( Only XP-60 models)

The product can be provided with an integrated KSU extract valve with included VRGM fitting. (available in Ø100 and Ø125 mm). If you have 2 air connections 2x100, L<sub>nom</sub> of the Professor XP must be longer than 1.4 m to include the extract air plus feature.

The KSU size Ø125 can only be integrated in I-60/-62 models. For other ceiling adaptation please use Ø100 or check with Lindab support.



Picture 5. Section view of I-60 with integrated KSU extract valve and VRGM fitting.



Picture 3c. Professor XP I recessed in suspended ceiling.

# Active chilled beams

# Professor XP



Picture 6. Professor XP I-60 with face plate, slot 50% perforation (Standard).

## Design

### With many possibilities

High priority has been given to the desire for a compact product with a lowest inset height on the market with 120 mm (146 mm) only. With this low height the Professor XP is able to solve many installation challenges in a modern but also in existing buildings.

Notwithstanding its low height the Professor XP is a real power pack full of opportunities. With many plus features in addition to the standard cooling, heating and ventilation function to always reach a perfect indoor climate without draft.

### Perforation pattern

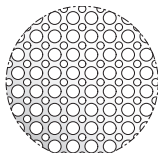
The Professor XP is available in four different versions with two different width.

To change the visible effect the front plate can have different appearances, due to three different possible perforation patterns.

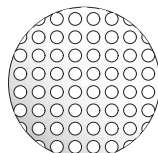
Either with longitudinal slots (slot 50%, see picture 6), circular Dotx2 50% (plus feature) or Dot 38% (plus feature, available for models F-60/I-60 only!).



Slot 50%



Dotx2 50%



Dot 38%

Picture 7. Available perforation patterns.

## Integrated lighting equipment

As a special solution, LED lighting can be integrated on request.

The Professor XP beam with its unique construction and low overall height also offers a great possibility to integrate a large range of lighting equipment e.g. centrally in the front plate.



Picture 8. Professor XP I-60 with integrated lighting.



# Active chilled beams

# Professor XP

## Hygiene

### Everything is accessible from below

The requirement for all parts of the beam to be easy to clean has been met by the removable underside and the detachable cleaning and adjustment hatch. By loosening the hatch, you can clean both the incoming duct system, and the beam's side ducts, from the inside. The vertical batteries are accessible from three sides and thus can be cleaned thoroughly. The same applies to the Coanda nozzles, which can be easily cleaned from below. Thus, you can clean the product thoroughly without access to the short sides of the product, which can thus be positioned directly against a wall.

## Room environment

The ventilation principle for the Lindab Professor XP is that the cooled or heated air is spread across the ceiling until it reaches the walls where it is driven, to a certain extent, down into the room. The heated air is then absorbed from the space below the beam for further cooling or heating. In this way, the room is well ventilated. Conventional active chilled beams, which spread the air linearly, can create high air

velocities, as the air stream becomes compressed and concentrated towards the centre. To reduce air velocities, the air distribution in the Lindab Professor XP is angled outwards (standard). The divergent nozzles are successively directed outwards to ensure the optimum air distribution and a short throw. The air velocities created, using this technology, are significantly lower than those for conventional supply air beams with linear outlet.

By using double air ducts, we have made use of the whole volume of the beam. Therefore, the product can handle large volumes of air while keeping its own noise low, despite its small external dimensions.

As regards noise, the nozzles are shaped like an inverted trumpet, i.e. somewhat negatively directed at the outlet, which also leads to very low noise from the nozzle. The structure of the product, with a distribution channel to the double side ducts and a sound absorber on each end of the ducts, means that the internal sound dampening of the product is very good and that cross noise in the ventilation system and between rooms is low.



Picture 9. Professor XP I-60 placed in an office environment.



# Active chilled beams

# Professor XP



Picture 10. Professor XP F-60



Picture 11. Professor XP I-60

## Data, standard version

The Professor XP is a 2-way active chilled beam and can be prepared as standard for ventilation and cooling (2-pipe connection) or cooling and heating (4-pipe connection). It is both available in an integrated I-45/I-60 and an exposed version F-45/F-60. The I-60 can be integrated into a suspended ceiling (standard: T24/T15 lay-in 600).

### Lengths:

Professor XP is available in nominal lengths from 1.2 m to 3.6 m in steps of 0.1 m.

### Width:

The Professor XP is available in I-45/F-45 (442 mm) and in I-60/F-60 (592 mm).

### Height:

Model F has a height of 120 mm, with a low air duct connection, and the model I has a height of 146 mm with a high air duct connection (for recessed installation in a suspended ceilings and with the air connection above the supporting structure).

### Water connection:

The cooling- and/or heating in- and outlet connections are male, straight and horizontal or vertical in 12 mm. NB! The connections must not be soldered (use Lindab's push-on fittings!).

### Performance value and battery types:

There are 4 different performance values/battery types available: min, med, high and max. They are available with 2-pipe or 4-pipe connection (page 12, table 4).

### Air connection:

Horizontal or vertical air connection, Ø100 mm male.

### Air distribution pattern:

The beam can be ordered with different air distribution patterns to maintain different airthrow lengths, short (default), medium or long.

### Airflow control:

The product has a pre-set 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.

### Design:

Downfoldable/demountable front plate perforated with longitudinal slots as standard (Slot 50%, see page 6).

### Access hatch:

The special access hatch is accessible after opening the front plate to access both the air plenum and the connection duct.

### Material:

Professor XP is manufactured as standard from enamelled sheet metal. The batteries consist of aluminium lamellas and copper pipes.

### Colour:

The product is available as standard, in signal white RAL 9003 or in pure white RAL 9010, gloss value 30. Other RAL colours on request.

# Active chilled beams

# Professor XP

## Plus features

### Factory pre-installed.

#### Integrated control valves and actuators:

2-way control valves, with push-on fittings, variable Kv-value and equipped with 24V on/off or modulating 0-10 V actuators can be pre-installed in the product.

[Waterborne accessories](#)

#### Integrated condensation guard:

There is an option to have Lindab's Regula Secura condensation guard pre-installed in the product.

[Regula Control equipment](#)

#### Integrated Regula Connect cards:

The product can be equipped with different Regula Connect connection cards (refer to the chapter Regula).

[Regula Connect](#)

#### Adaptation for suspended ceilings:

The product can be adapted to different types of suspended ceilings offered on the market. [Installation Instruction](#)

#### Design:

There are two additional perforation patterns available (see page 5).

#### Additional air connection, 2x100:

The beam is available with an additional Ø100 connection on the opposite side. This will reduce the active length  $L_{act}$  of the beam by 0.2 m.

#### Air vent:

For letting the air out of the piping (oxygen-free piping) an air vent could be pre-installed in the beam.

#### Air boost:

An additional percentage of extra nozzles and plugs for future flexibility.

#### Extract air valve KSU (XP-60 models only):

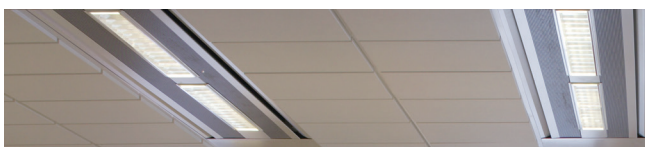
The product can be provided with an integrated extract valve (page 5, picture 5).

#### Integrated regulation unit:

It is possible to have Lindab's room regulator, Regula Combi, pre-installed in the product. The control panel is fully accessible through the frontplate. Please see the [Regula Combi](#) documentation.

## Special features

LED lighting can be integrated into Professor XP on request. Do not hesitate to contact lindab for further information.

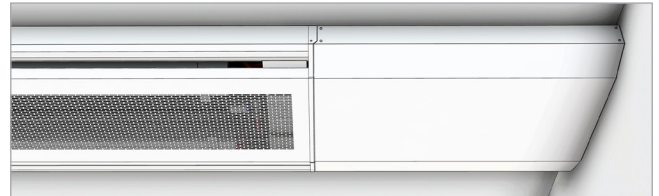


Picture 12. Professor XP I-60 with integrated lighting.

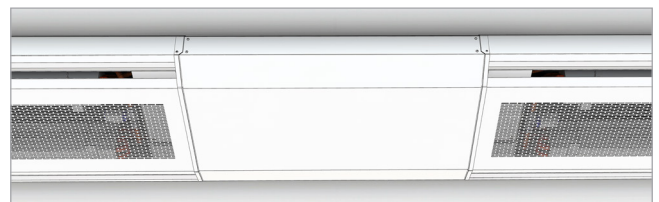
## Accessories

### Connection Covers:

For the exposed models XP F-45 and XP F-60, two types of connection covers with included installation brackets are available. For details, go to the [installation instruction](#) 5.5.1.



Picture 13.a. Professor XP F-60 with connection cover type CW.



Picture 13.b. 2x Professor XP F-60 with connection cover type CC.

### Air connection:

For flexible connection, a flexible duct is available in Lindab's ADS assortment:

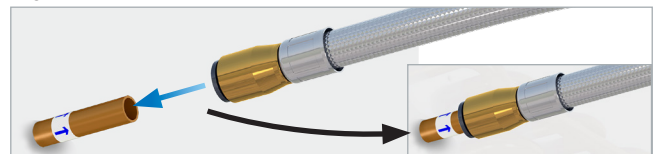
Sample order code: DRATMFU-100-500



Picture 14. Lindab's flexible duct assortment.

### Water connection:

For flexible connection, an oxygen diffusion impermeable, flexible hose with JG push-on couplings or other coupling types (on demand) are available. See "[accessories](#)" document.



Picture 15. Example of water connection cooling outlet with push-on flexible hose.

### Hangers:

For recommended installation principles See: "Professor XP [Installation Instruction](#)".

### Control equipment:

Lindab offers control equipment that is very simple to use. To avoid the heating and cooling being activated at the same time, the system is controlled sequentially (Regula Combi). For the technical data, refer to the [Regula Combi](#) documentation.



Picture 16. Regula Combi

For additional accessories, go to the "[Accessories](#)" document.

# Active chilled beams

# Professor XP

## Dimensioning

The specific dimensioning of the active chilled beam can be easily done with our waterborne calculator in our online quick selection tool LindQST.

[Calculate the Professor XP here](#)



Picture 16. LindQST - Indoor Climate Designer

LindQST® helps you select the right waterborne products, e. g. active chilled beams, passive radiant chilled beams, radiant cooling- and heating panels and facade units and quickly finds the corresponding documentation.

In [Waterborne Documentation](#) you can easily find all available product documentation. Always in the latest version.

In [Waterborne Calculator](#) you can do a professional calculation based on your specific input data to finetune your choice or calculate different variants of the product. Smart warnings point out if a set-up will not work.

In [Waterborne Selector](#) you can compare the proposed products according to your specific requirements and select the one which fits best to your needs .

Not enough? With [Indoor Climate Designer](#) you can insert your selected waterborne product into your room and simulate the actual air distribution, optimise the placing in the ceiling taking into account the calculated air velocities and sound levels.

You can at anytime display your selection and calculations graphically. In addition, you can print or save all results and related documents for your documentation (incl. data sheets, dxf-files and room books).

With lindQST® you will easily find the most suitable product for your project.

It provides easy and quick access to the latest product information, technical specifications and assembly instructions on the internet, making it the ideal tool for installers, consultants and architects alike.

[www.LindQST.com](http://www.LindQST.com)

- Easy access to all current documentation.
- Fast design of waterborne products.
- Indoor Climate Designer: Graphical representation of the spatial situation in 2D / 3D and floor plans from AutoCAD®.
- Calculation of capacities, sound power levels, pressure losses and flow conditions.
- 3D particles or smoke show the air distribution in the room.
- Diagram showing the time course of the CO<sub>2</sub> concentration in the room.
- Room book generation and data sheet for individual rooms and outlets or entire projects.
- Project can be saved and exchanged in its own project area.
- Fast product selection waterborne products in accordance to Eurovent (chilled beams and facade units).





# Active chilled beams

# Professor XP

## Dimensioning air velocities

### Air distribution patterns

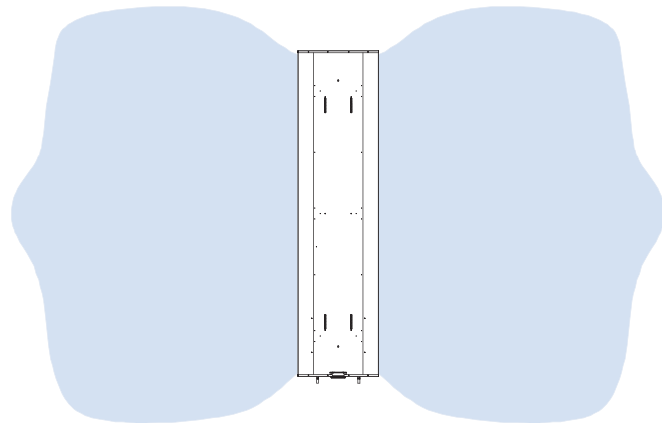
Professor XP and other induction beams utilise the pressure of the supply air to cause the room air to circulate through the cooling battery. This enables a high cooling capacity, but also creates significant air movements, which often result in long throw lengths. This is why Professor XP is supplied as default with a short air distribution that is angled outwards (divergent nozzles). It significantly reduces both airtrow lengths and air velocities compared to the conventional linear nozzle technology.

Depending on the room conditions, Professor XP is available also with a medium or a long distribution profile. Below is an example of how the different distribution profiles affect the airtrow length.

**NB!** This is a principle only for visualizing the possible air distribution profile. To calculate the beam with your specific settings, please refer to the [waterborne calculator](#) or the [indoor climate designer](#) in [www.lindQST.com](http://www.lindQST.com).

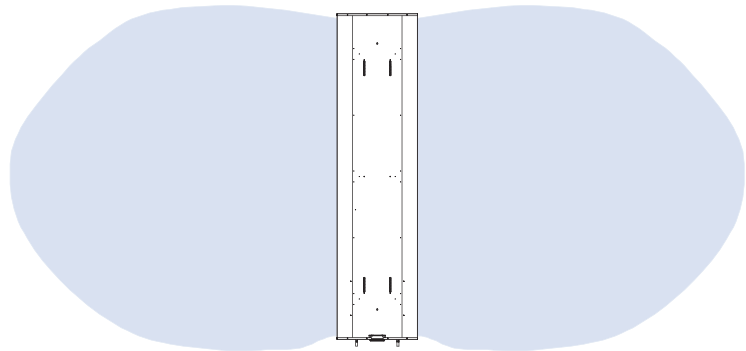
### Short air distribution (default)

Professor XP is supplied as standard with a short air distribution that is angled outwards (divergent nozzles).



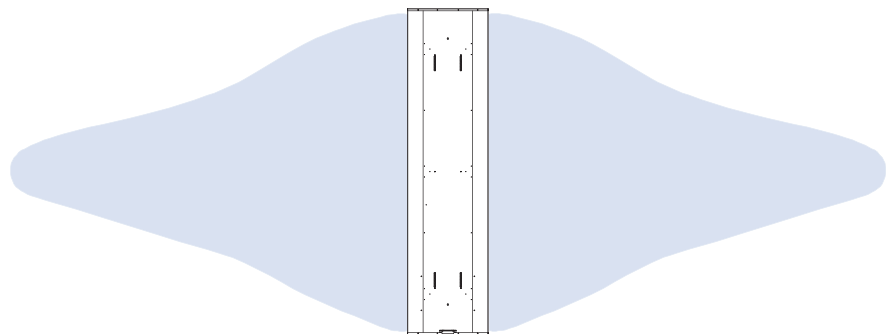
### Medium air distribution

The medium air distribution pattern provides an airtrow in between the long and the short air distribution pattern.



### Long air distribution

The long air distribution pattern is used when a long airtrow is needed; e. g. when the beam is placed centrally with long distances to the walls or several beams are installed in one line, to avoid overlapping air distribution pattern which will result in even longer airtrows.



Picture 18. Air distribution patterns

# Active chilled beams

# Professor XP

## Minimum water flow

Please note that water flows below the recommended minimum flow, can result in unwanted air in the water pipes and reduced capacity.

| Pipe diameter | System             | $q_{w \text{ min}}$<br>[l/s] | $q_{w \text{ nom}}$<br>[l/s] |
|---------------|--------------------|------------------------------|------------------------------|
| 12 mm         | Cooling or heating | 0.025                        | 0.038                        |

Table 2. Water flows  $q_{w \text{ min}}$  and  $q_{w \text{ nom}}$  of the beam.

Lindab's active chilled beams are Eurovent-certified and tested according to EN-15116.



## Material data

| Type                  | Professor XP      |
|-----------------------|-------------------|
| Copper pipes, quality | EN-12735-2 CU-DHP |
| Pressure class        | PN10              |

Table 3. Professor XP material data.

## Possible battery configurations for Professor XP models

### Professor XP F-60 and I-60

All battery types possible.

### Professor XP F-45 and I-45

Possible battery types: 4-pipe: 0606, 0602, 0402  
2-pipe: 0600, 0400

## Specific measures for the water circuit

| Performance value                   | Function | Battery type<br>CC HH | Dry weight<br>[kg/m] | Water content cooling<br>[l/m] | Water content heating<br>[l/m] | Water content total<br>[l/m] |
|-------------------------------------|----------|-----------------------|----------------------|--------------------------------|--------------------------------|------------------------------|
| Maximal cooling and maximal heating | 4-pipe   | 12 06                 | 14.2                 | 1.1                            | 0.6                            | 1.7                          |
| Maximal cooling and minimal heating | 4-pipe   | 12 02                 | 13.7                 | 1.1                            | 0.3                            | 1.4                          |
| Maximal cooling or maximal heating  | 2-pipe   | 12 00                 | 13.5                 | 1.1                            |                                | 1.1                          |
| High cooling and maximal heating    | 4-pipe   | 08 06                 | 13.7                 | 0.8                            | 0.6                            | 1.4                          |
| High cooling and minimal heating    | 4-pipe   | 08 02                 | 13.2                 | 0.8                            | 0.3                            | 1.1                          |
| High cooling or high heating        | 2-pipe   | 08 00                 | 13.0                 | 0.8                            |                                | 0.8                          |
| Medium cooling and maximal heating  | 4-pipe   | 06 06                 | 12.4                 | 0.6                            | 0.6                            | 1.2                          |
| Medium cooling and minimal heating  | 4-pipe   | 06 02                 | 11.9                 | 0.6                            | 0.3                            | 0.9                          |
| Medium cooling or medium heating    | 2-pipe   | 06 00                 | 11.6                 | 0.6                            |                                | 0.6                          |
| Minimal cooling and minimal heating | 4-pipe   | 04 02                 | 11.8                 | 0.4                            | 0.3                            | 0.7                          |
| Minimal cooling or minimal heating  | 2-pipe   | 04 00                 | 11.5                 | 0.4                            |                                | 0.4                          |

Table 4. Professor XP, weight and water volume for F-60 / I-60 with different battery types.

## Sound attenuation

Professor XP sound attenuation  $\Delta L$  [dB], between air duct and room including end reflection.

| Internal sound attenuation $\Delta L$ |    |     |     |     |      |      |      |      |
|---------------------------------------|----|-----|-----|-----|------|------|------|------|
| Hz                                    | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| dB                                    | 20 | 20  | 10  | 10  | 10   | 12   | 15   | 20   |

Table 5. Sound attenuation  $\Delta L$  [dB].

# Active chilled beams

# Professor XP

## Connection variants for air and water

The connection variants for Professor XP are optimised in order to meet all practical coupling strategies. For further more detailed information, please refer to [Installation Instruction](#) Professor XP.

## Supply air connections

Both the horizontal (A) and the vertical (B) supply air connections are equipped with Lindab SafeClick® as a standard. This makes the usage of screws or pop rivets unnecessary, and facilitates fast installation of the units, for secure installation with tightness class D. The ventilation connections are always Ø100 mm.

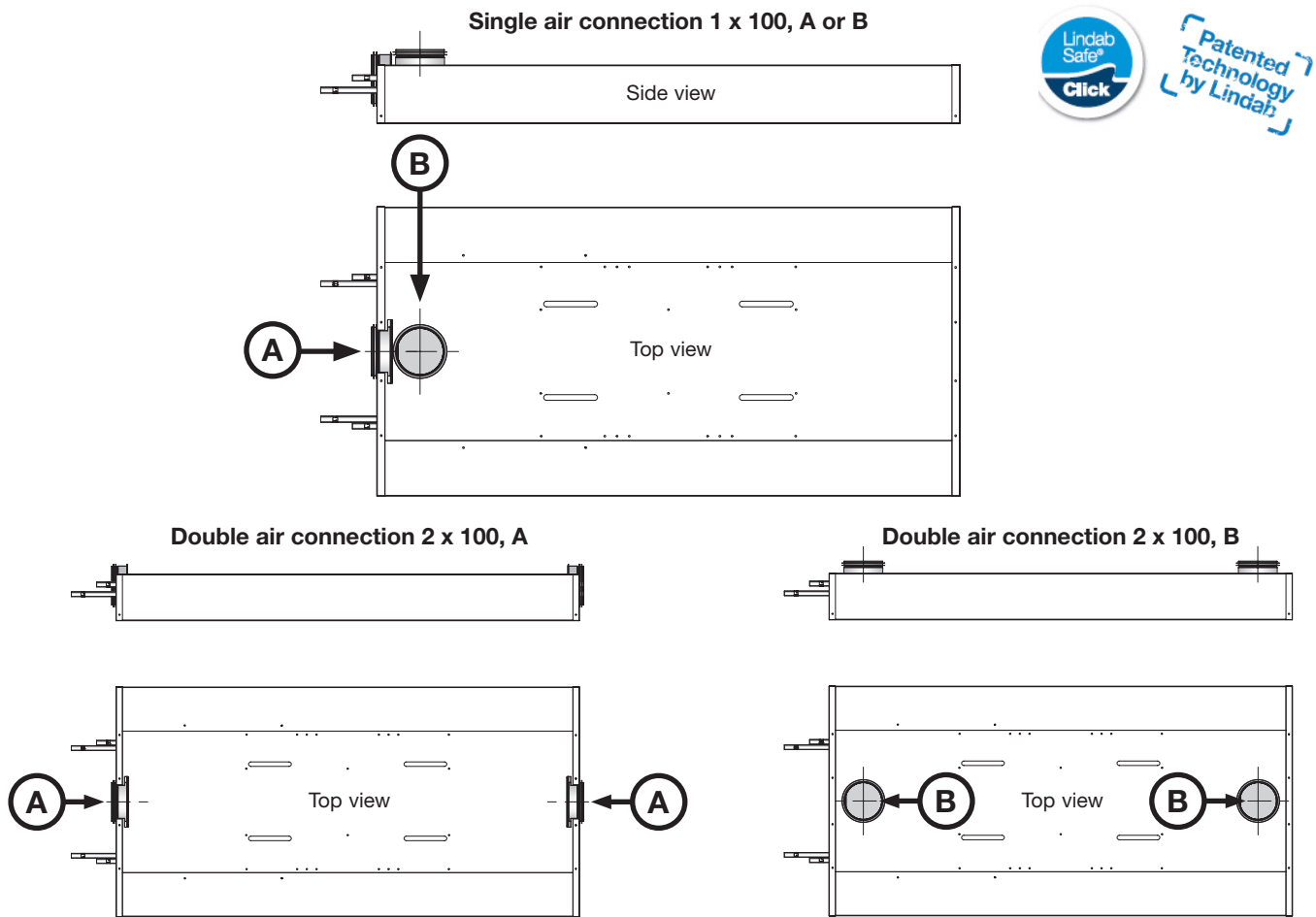


Figure 1a. Possible Professor XP single and double supply air connections (always Ø = 100 mm). Examples above show XP-I60 models with single A, B, 2 x A and 2 x B connections. Possible air connections valid for all XP models. (I-60, I-45, F-60 and F-45). Examples illustrated with 4-pipe water connection type 1, (over-view water connections, see next page).

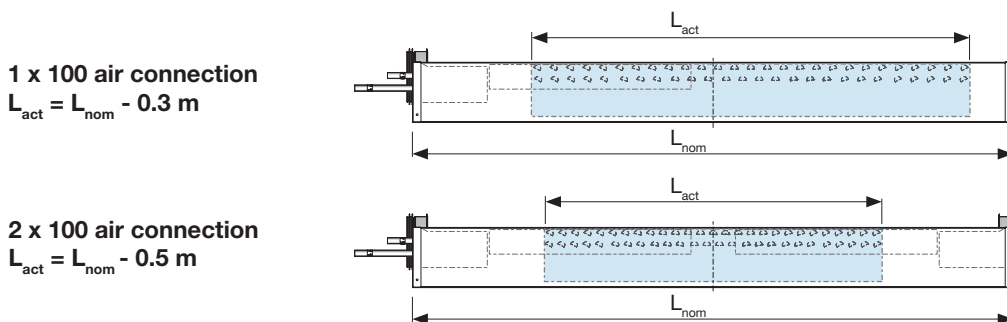


Figure 1b. The active length of the battery ( $L_{act}$ ) is smaller than the product nominal length ( $L_{nom}$ ), and will be further reduced when adding a 2x100 supply air connection.



# Active chilled beams

# Professor XP

## Water in- and outlet connections

The beam is available with one water circuit (2-pipe system) or two water circuits (4-pipe system).

### The 2-pipe water connection beam contains one water circuit only. It can be used:

- when the beams are used for cooling only (e. g. in combination with a separate independent radiator heating system).
- in change-over systems for both cooling and heating (e. g. the water circuit is connected to both a chiller and a boiler and can be used for both seasonal heating or cooling in change-over).
- in combination with a 6-way valve (where both a cooling and a heating system are controlled by a 6-way valve using the water coil of the beam for both functions).

### The 4-pipe water connection beam contains two water circuits. One for heating and one for cooling. This is the Lindab recommendation as it shows the most advantages:

- no additional water piping to the outside wall or along the facade (e. g. compared to a radiator heating system).
- free facade for architectural freedom (e. g. full glass facade).
- two separate hydronic systems for easy commissioning, control and lowest energy demands.
- optimised water flows for cooling and heating with easy hydronic balancing.

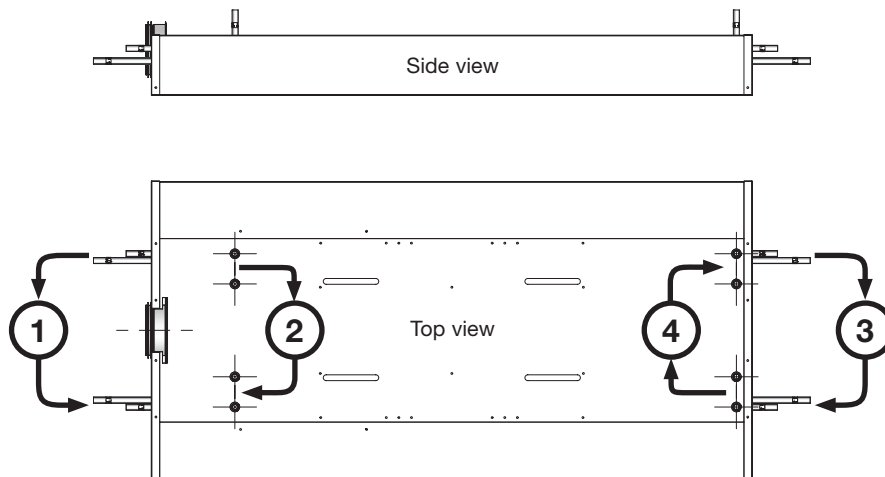


Figure 2. Possible Professor XP water connections (always  $\varnothing = 12\text{ mm}$ ). Example shows XP-160 model with single A ventilation connection. Possible water connections 1, 2, 3, 4 valid for all XP models.

# Active chilled beams

# Professor XP

## Water connections

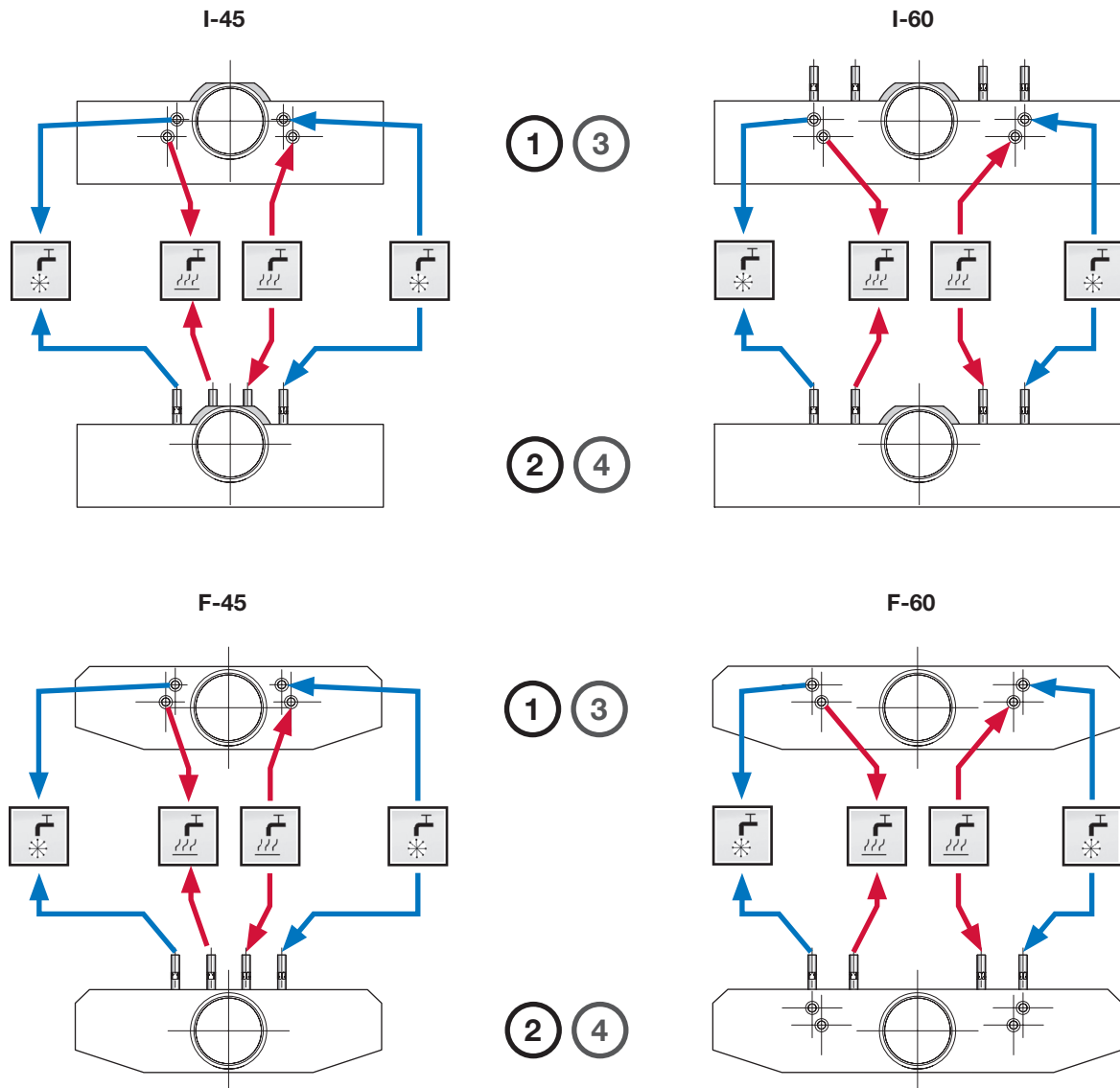


Figure 3. Overview of Professor XP water connections (always  $\varnothing = 12$  mm). Shown with ventilation connection A.

## Ventilation / Water -connection examples

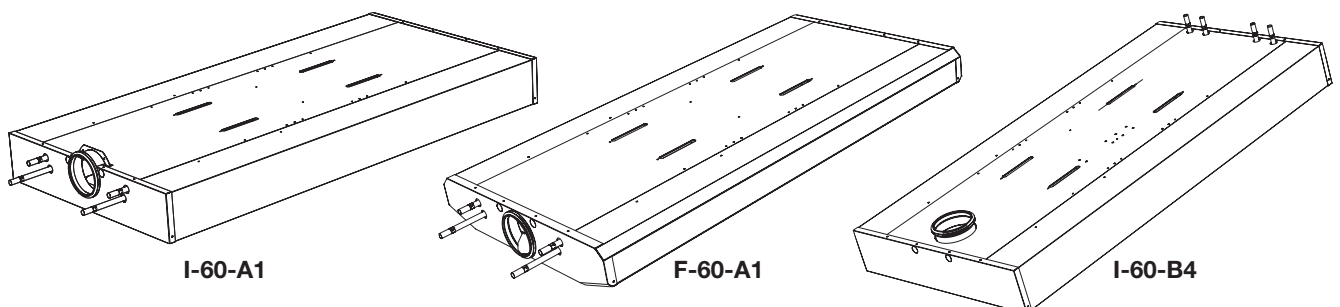
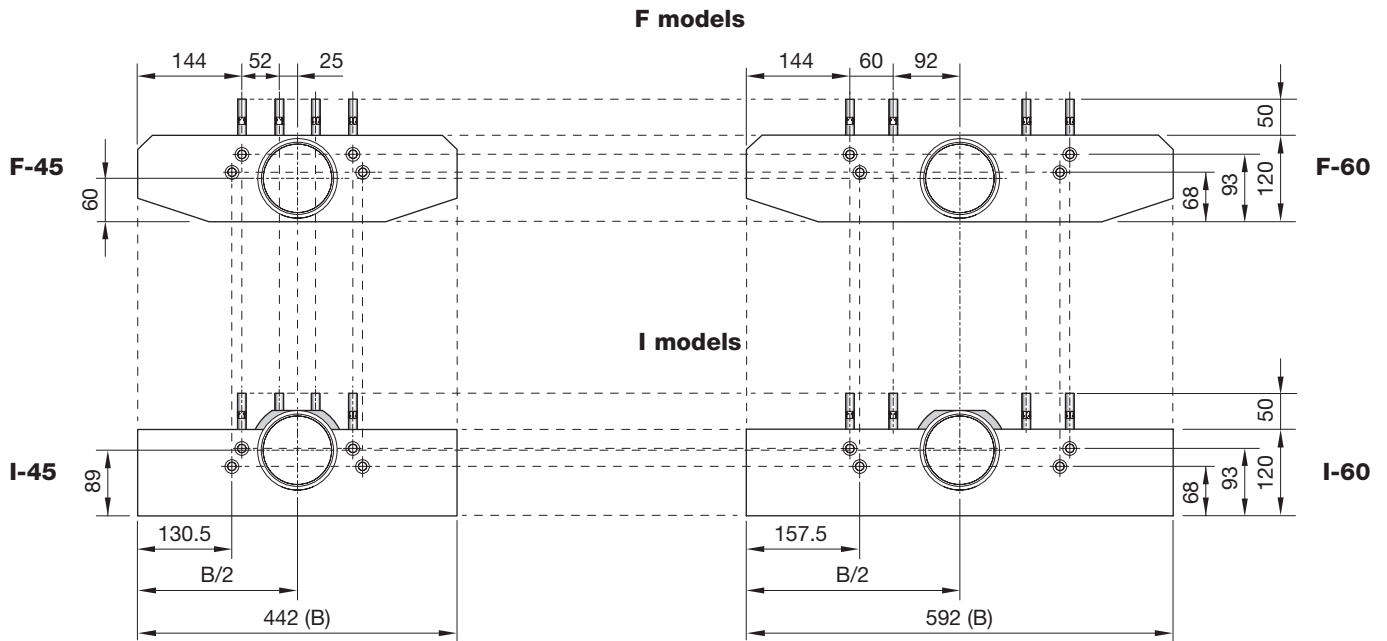


Figure 4. Examples of supply air and water configurations.

# Active chilled beams

# Professor XP

## Dimensions, mm Professor XP



**NB!** The Professor XP-F has low horizontal ventilation connections for possible installation directly against a ceiling (exposed version).

**NB!** The Professor XP-I has high horizontal ventilation connections for recessed installation in a suspended ceiling (integrated version).

Figure 5a. Placement and dimensions of water- and supply air connections.

All supply air connections = Ø100 mm

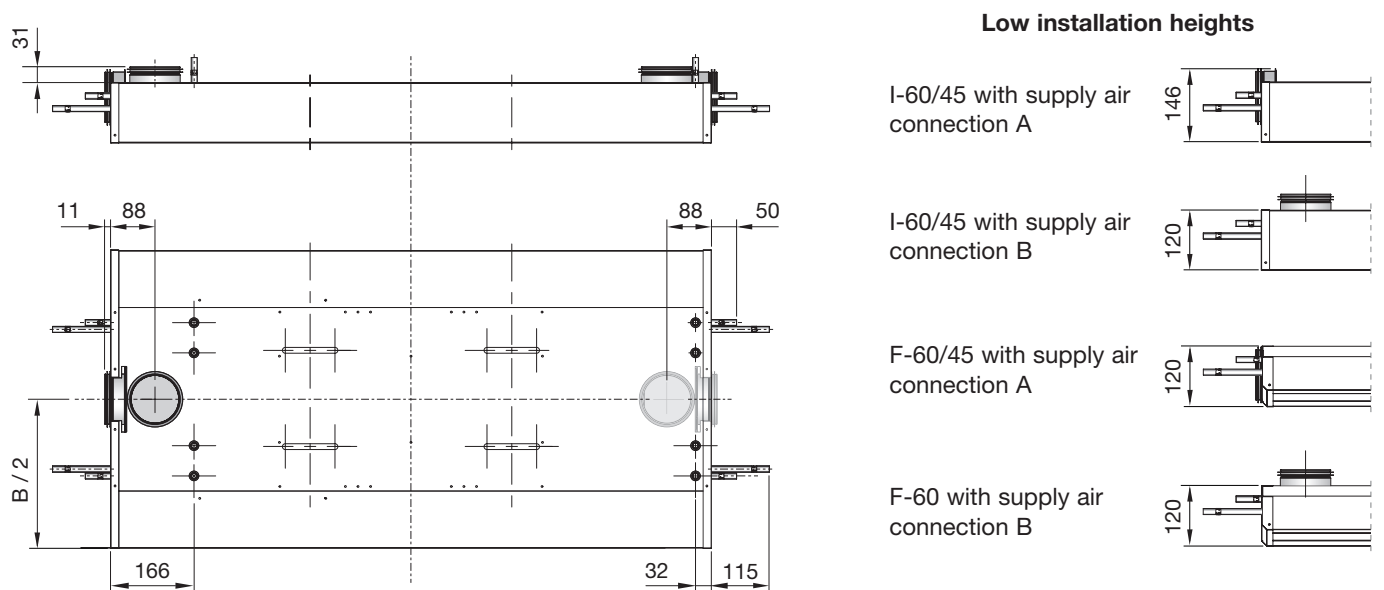


Figure 5b. Placement and dimensions of water- and supply air connections.

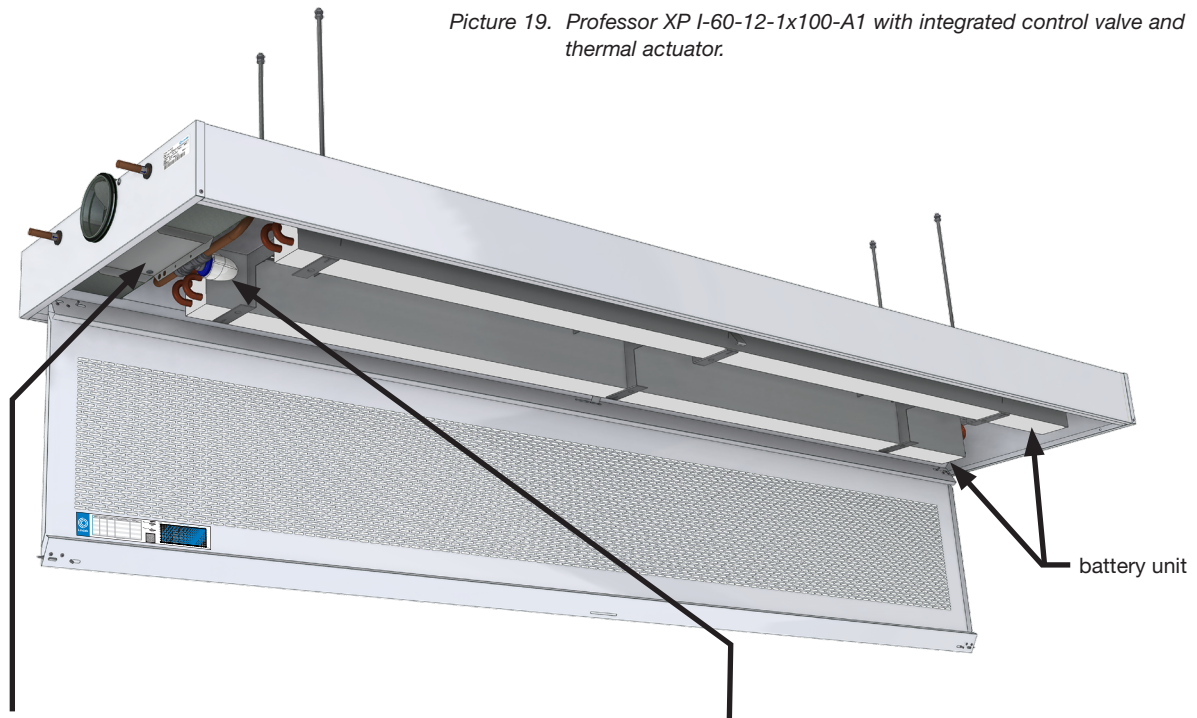
# Active chilled beams

# Professor XP

## Access to inner parts

The Professor XP openable faceplate gives easy access to inner parts and maintenance. A special access hatch gives access to the ventilation plenum and air duct and allows inspection of the plenum box if connected.

Picture 19. Professor XP I-60-12-1x100-A1 with integrated control valve and thermal actuator.

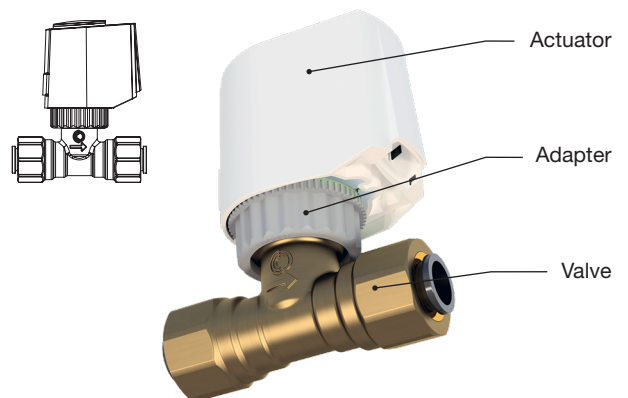


### Access hatch



Picture 20. Opening inspection hatch.

### Valve & actuator



Picture 21. Valve and actuator.



Picture 22. If a 4-pipe connection is chosen, 2 valves and actuators will be integrated in water piping (with one valve on the other end of the battery).



# Active chilled beams

# Professor XP

## Suspension

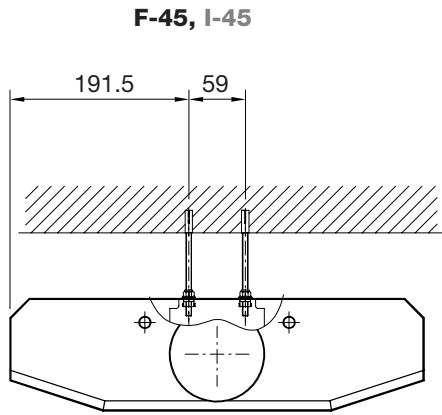


Figure 6. Professor F, installed exposed (free hanging).

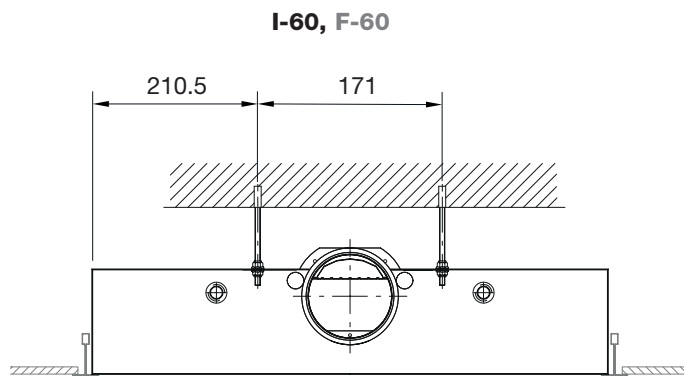


Figure 7. Professor I, installed recessed in suspended ceiling.

$L_{nom}$  : 1200 - 3600 mm (In steps of 100 mm)       $A$  = 1192 - 3592 mm

Where  $L_{nom}$  = Nominal product length (order length).

For all models :    When  $L_{nom} \leq 2700$  mm  $\Rightarrow$  4 x threaded rods (M8)  
                           When  $L_{nom} > 2700$  mm  $\Rightarrow$  6 x threaded rods (M8)

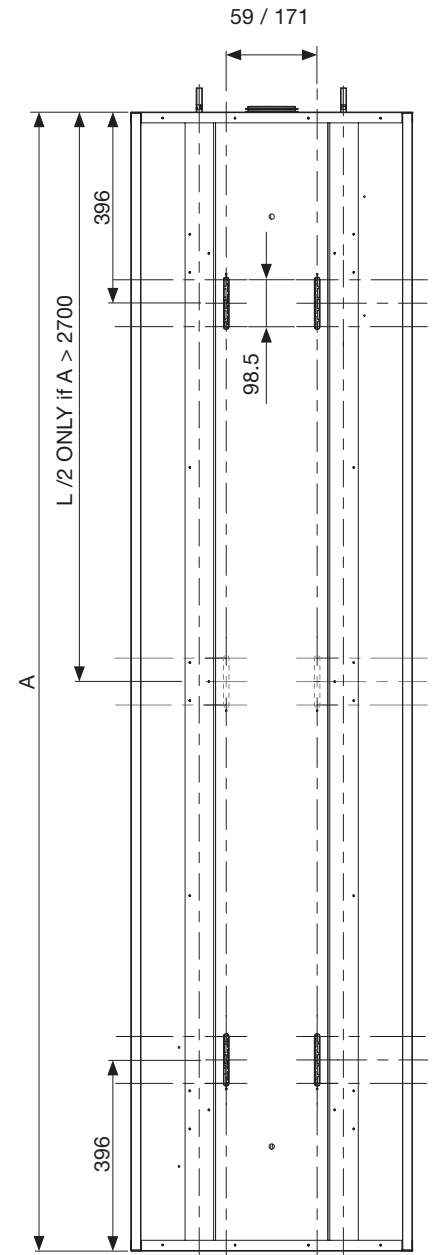


Figure 8. Suspension dimensions.

# Active chilled beams

# Professor XP

## Programme text

"Lindab's high performance active chilled beam Professor XP provides great freedom for installation, as its inset height is the lowest in the market, with an overall height of only 120/146 mm. It is available from 1.2 m up to 3.6 m length.

Professor XP is equipped with a pre-set air distribution pattern, which provides a draft-free indoor climate.

Professor XP can be furnished with the following features cooling, heating, ventilation, Regula Secura condensation guard, Regula connect cards, built-in valves and actuators, built-in lighting, etc. LED lighting can be integrated on request. It offers many possibilities and great flexibility.

Professor XP is available with both 2-pipe and 4-pipe water connection and can be installed both exposed free hanging (F-; 120 mm) or recessed in a suspended ceiling (I-; 146 mm) in: single- and open offices, meeting rooms, entrance halls, schools, banks, etc.

The new powerful battery concept from Lindab, now integrated in the Professor XP, offers 4 different standard battery types with both 2-pipe and 4-pipe water circuits. Always the best choice.

Lindab's active chilled beams are Eurovent-certified and tested according to EN-15116.

Professor XP is available as standard, in signal white RAL 9003 or in pure white RAL 9010, gloss value 30. Other RAL colours on request.

## Technical data\*

|   |                                     |
|---|-------------------------------------|
| <b>Manufacturer:</b>                      | Lindab                              |
| <b>Product:</b>                           | Professor XP                        |
| <b>Type:</b>                              | PRO-I-60-12-1x100-A1-1206-2.4-80-20 |
| <b>Function</b>                           | Cooling/Heating - 4-pipe            |
| <b>Length:</b>                            | 2392 [mm]                           |
| <b>Width:</b>                             | 592 [mm]                            |
| <b>Height:</b>                            | 146 [mm]                            |
| <b>Water connection:</b>                  | 12 [mm]                             |
| <b>Supply air connection:</b>             | 100 [mm]                            |
| <b>Connection type:</b>                   | A1                                  |
| <b>Static nozzle pressure:</b>            | 80 [Pa]                             |
| <b>Primary airflow rate:</b>              | 20 [l/s]                            |
| <b>Primary air temperature:</b>           | 8 [°C]                              |
| <b>Water temperatures cooling in/out:</b> | 14/17 [°C]                          |
| <b>Room temperature:</b>                  | 25[°C]                              |
| <b>Water flow rate:</b>                   | 0.0611 [l/s]                        |
| <b>Pipe pressure loss:</b>                | 15.3 [kPa]                          |
| <b>Total capacity:</b>                    | 938 [W]                             |
| <b>Induction ratio:</b>                   | 3.6                                 |
| <b>Sound power level:</b>                 | 29 [dB(A)]                          |
| <b>Colour:</b>                            | RAL 9003, gloss 30                  |

**Amount: 2 pieces**

## Accessories

|                    |                                    |
|--------------------|------------------------------------|
| <b>Product:</b>    | Professor XP F-60 Connection cover |
| <b>Cover type:</b> | PRO-CW-60-500-NON-9003             |
| <b>Length:</b>     | 500 [mm]                           |
| <b>Width:</b>      | 592 [mm]                           |
| <b>Colour:</b>     | RAL 9003, gloss 30                 |

**Amount: 2 pieces**

\*For the technical data related to your specific beams please refer to the [Waterborne Calculator](#) in [www.lindqst.com](http://www.lindqst.com)

# Active chilled beams

# Professor XP

## Specifications

|                                      |  |
|--------------------------------------|--|
| <b>Product:</b>                      | Professor XP                             |
| <b>Type:</b>                         | F-45, F-60, I-45, I-60                   |
| <b>Battery type function:</b>        |  |
| 2-Pipe (Cooling or heating):         | 1200, 0800, 0600, 0400                   |
| 4-Pipe (Cooling and heating):        | 1206, 1202, 0806, 0802, 0606, 0602, 0402 |
| <b>Connection diam. water, [mm]:</b> | 12                                       |
| <b>Connection diam. air, [mm]:</b>   | 1x100 or 2x100                           |
| <b>Coupling options:</b>             | A1, A2, A3, A4, B1, B2, B3, B4           |
| <b>Nominal length L, [m]:</b>        | 1.2 to 3.6<br>(in steps of 0.1 m)        |
| <b>Static nozzle pressure, [Pa]:</b> | 30-120                                   |
| <b>Primary airflow rate, [l/s]:</b>  | 7-80                                     |
| <b>Distribution profile:</b>         | Short (default),<br>medium or long       |
| <b>Plus features:</b>                | See page 9                               |

## Order code

### Professor XP

|  |            |             |           |              |           |             |            |           |           |
|--|------------|-------------|-----------|--------------|-----------|-------------|------------|-----------|-----------|
| Product:                                 | <b>PRO</b> | <b>F-60</b> | <b>12</b> | <b>1x100</b> | <b>A1</b> | <b>1206</b> | <b>2.4</b> | <b>60</b> | <b>20</b> |
| Professor XP                             |            |             |           |              |           |             |            |           |           |
| Type:                                    |            |             |           |              |           |             |            |           |           |
| F-60, F-45, I-60, I-45                   |            |             |           |              |           |             |            |           |           |
| Water connection [mm]:                   |            |             |           |              |           |             |            |           |           |
| 12                                       |            |             |           |              |           |             |            |           |           |
| Air connection [mm]:                     |            |             |           |              |           |             |            |           |           |
| 1x100, 2x100                             |            |             |           |              |           |             |            |           |           |
| Connection type:                         |            |             |           |              |           |             |            |           |           |
| A1, A2, A3, A4, B1, B2, B3, B4           |            |             |           |              |           |             |            |           |           |
| Battery type:                            |            |             |           |              |           |             |            |           |           |
| 1200, 0800, 0600, 400,                   |            |             |           |              |           |             |            |           |           |
| 1206, 1202, 0806, 0802, 0606, 0602, 0402 |            |             |           |              |           |             |            |           |           |
| Nominal product length [m]:              |            |             |           |              |           |             |            |           |           |
| 1.2m - 3.6m (in steps of 0.1 m)          |            |             |           |              |           |             |            |           |           |
| Static nozzle pressure [Pa]:             |            |             |           |              |           |             |            |           |           |
| 30-120 Pa                                |            |             |           |              |           |             |            |           |           |
| Primary air flow rate [l/s]:             |            |             |           |              |           |             |            |           |           |
| 5-80 l/s                                 |            |             |           |              |           |             |            |           |           |

## Order code, accessories

### Professor XP-F Connection cover

|  |            |           |           |            |            |             |
|--|------------|-----------|-----------|------------|------------|-------------|
| Product:                                 | <b>PRO</b> | <b>CW</b> | <b>60</b> | <b>500</b> | <b>NON</b> | <b>9003</b> |
| PRO                                      |            |           |           |            |            |             |
| Installation type:                       |            |           |           |            |            |             |
| CC                                       |            |           |           |            |            |             |
| CW                                       |            |           |           |            |            |             |
| Professor XP-F width:                    |            |           |           |            |            |             |
| 45, 60                                   |            |           |           |            |            |             |
| Cover length [mm]:                       |            |           |           |            |            |             |
| 200 - 3.600 in steps of 1 mm             |            |           |           |            |            |             |
| Perforation type:                        |            |           |           |            |            |             |
| NON                                      |            |           |           |            |            |             |
| RAL colour:                              |            |           |           |            |            |             |
| 9003 gloss 30, other colours on request. |            |           |           |            |            |             |



Most of us spend the majority of our time indoors. Indoor climate is crucial to how we feel, how productive we are and if we stay healthy.

We at Lindab have therefore made it our most important objective to contribute to an indoor climate that improves people's lives. We do this by developing energy-efficient ventilation solutions and durable building products. We also aim to contribute to a better climate for our planet by working in a way that is sustainable for both people and the environment.

[Lindab](#) | For a better climate