

# Adlår Castra

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## Pre-Survey Checks

V202507-2

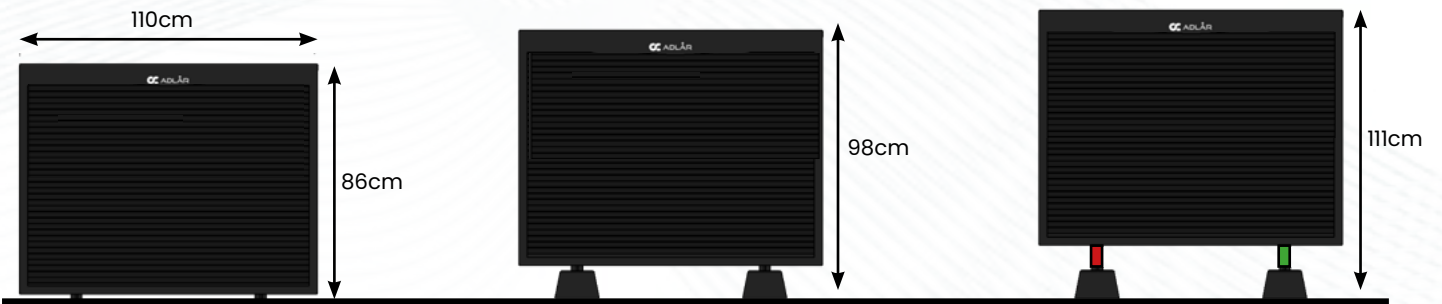


Heat Pump Experts

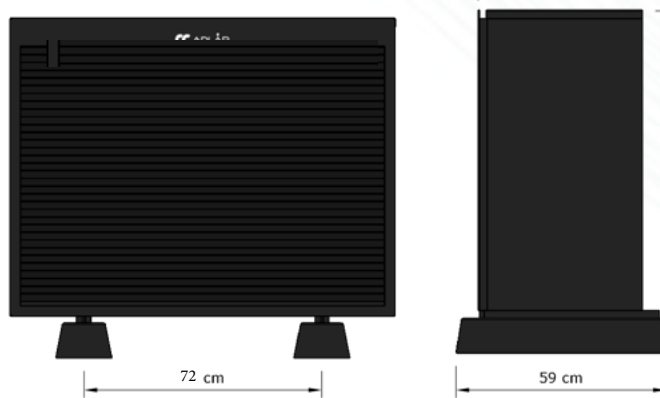
# 1 Heat Pump Dimensions



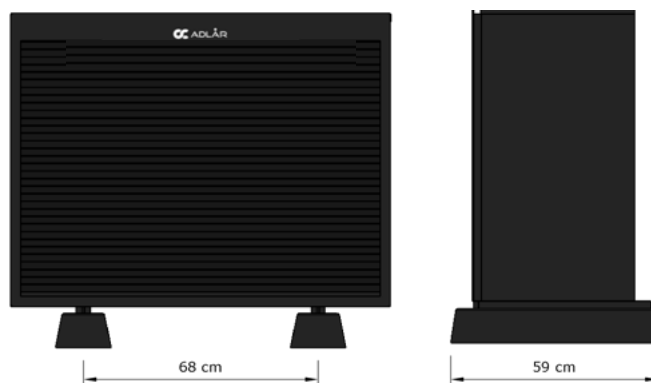
## AURORA II - Height

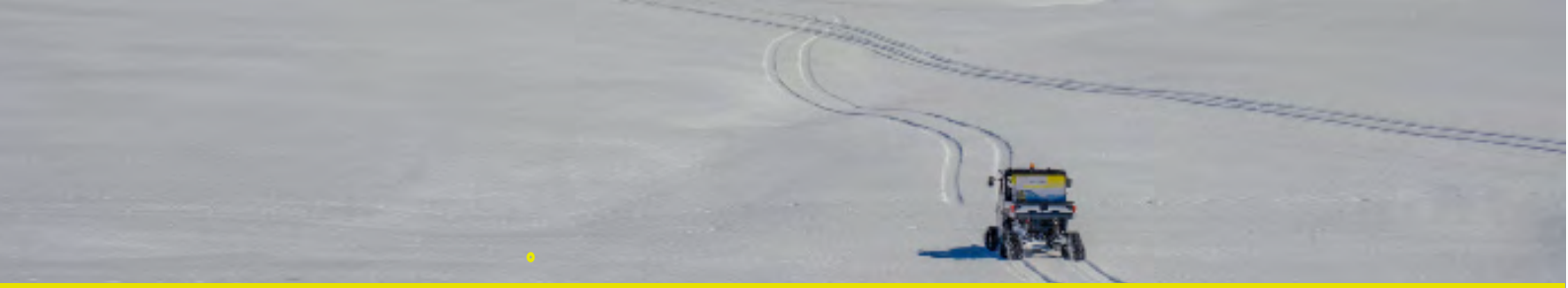


## AURORA II - 6&10kW



## AURORA II - 14kW





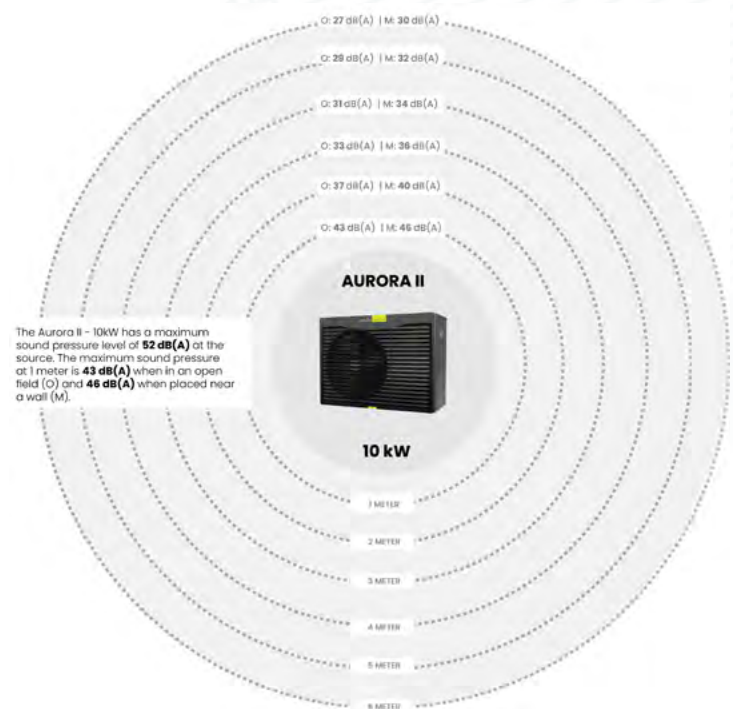
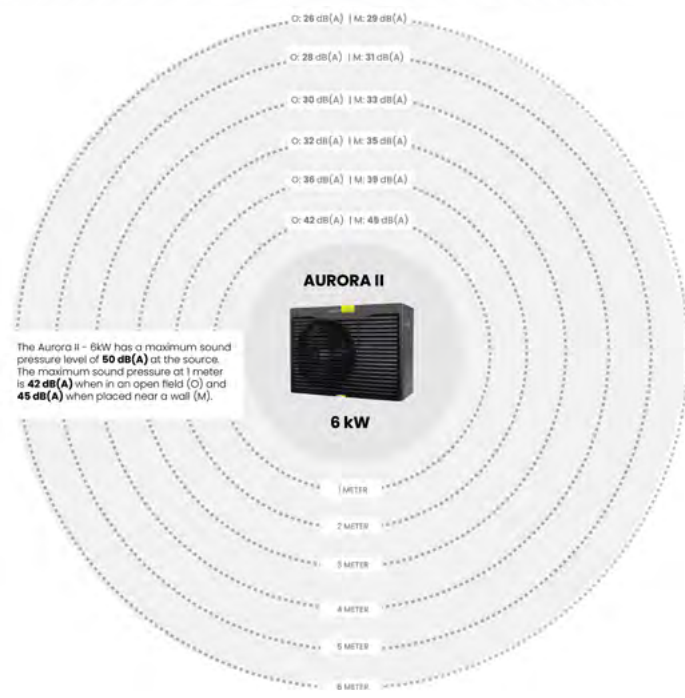
## 2 Noise & Location Considerations

### >5m Neighbours Windows

Your external heat pump must be installed outside your property. Ideally, it should be positioned close to your existing heating system or boiler, as the new heat pump will need to connect into the same pipework and services.

To avoid the need for planning permission, the heat pump should not be located too close to your neighbour's habitable room windows. As a general guideline, if the preferred location is closer than 5 metres to your neighbour's windows, please discuss this with your sales representative.

In accordance with MCS 020 regulations, air source heat pump installations must meet permitted development requirements, including limits on noise impact at neighbouring properties. We will assess noise levels as part of our design process to ensure compliance.

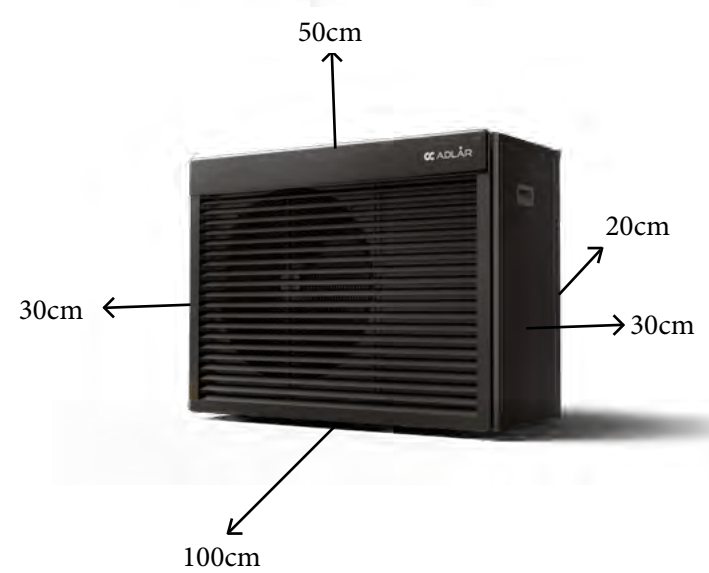


### Space Around Heat Pump

The required space around the heat pump is illustrated in the image provided.

Please be aware that solid brick walls or placement in narrow alleyways can amplify noise from the heat pump, even if those walls are located beyond the minimum clearance distances.

Best practice is to install the heat pump so that the fan faces into open space, allowing unobstructed airflow and minimising noise reflection.



### 3 Mounts and Installation Types

#### A. Hard Surface - Drained

If the heat pump is installed on an existing hard surface that allows adequate water drainage — such as gravel, sloped paving stones draining into a water outlet, or another permeable ground type — then the heat pump only needs to be mounted on standard heat pump feet for support and leveling.



#### B. Hard Surface - Not Drained

Heat pumps contain evaporators that generate water condensation during operation.

Careful consideration should be given to removing this water from the installation location, particularly if the area is used as a walkway or access route where standing water could freeze and create a slip hazard.

In such cases, a drainage tray should be fitted beneath the heat pump to collect the condensate, with a hose used to direct the water safely onto permeable ground away from traffic areas.



#### C. Soft Surface - Concrete Slab

If the heat pump is to be installed on a soft surface, such as grass, it must be positioned on a hard surface to prevent it from sinking.

A practical solution is to install two concrete slabs, each approximately 200mm wide by 620mm long and at least 140mm deep, to provide a stable base for the heat pump.



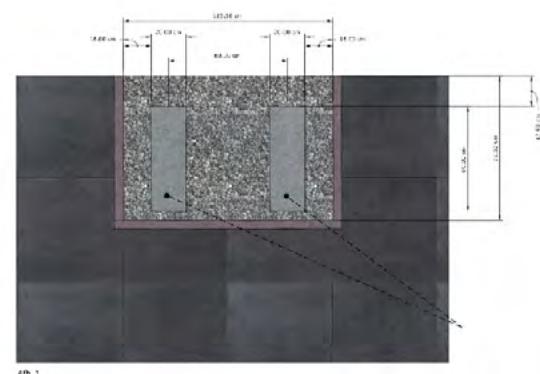
#### D. Soft Surface - Base Design

To ensure optimum water drainage, a gravel layer can be added beneath the foundation to promote effective soakaway.

The foundation slabs should meet the following requirements:

1. Sized and spaced appropriately for the specific heat pump model.
2. Stable and level, and must not sink into the ground — this should be verified, ideally during wet conditions.

The ground beneath the slabs must allow free drainage of water into the soil. A simple test is to pour a full watering can over the area and observe whether the water absorbs readily.



## E. Flat Roof Installation

Heat pumps can be installed on flat roofs. If your project is operating on a construction site, the heat pump can be delivered in advance to allow your team to position it prior to installation.

Alternatively, Adlår can arrange for a crane to lift the heat pump into place at the time of installation.

Please note: a minimum 1 metre safety zone must be maintained around the heat pump for safe and effective operation.



## F. Wall Bracket

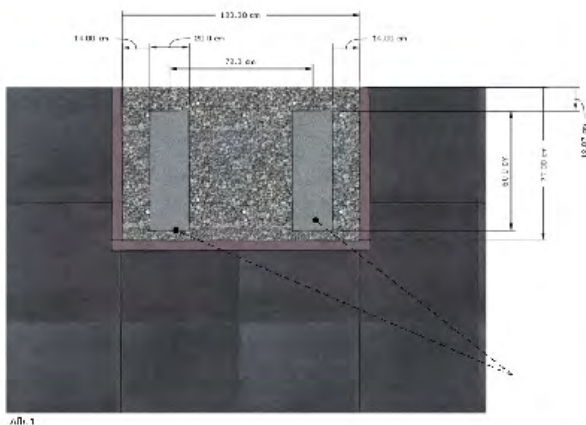
Wall brackets allow the heat pump to be mounted on your wall, providing flexibility in positioning.

Please note that Adlår cannot take responsibility for the build quality of the wall itself. Some vibration may be transmitted through the wall with this type of installation, and this should be considered when choosing the mounting location.

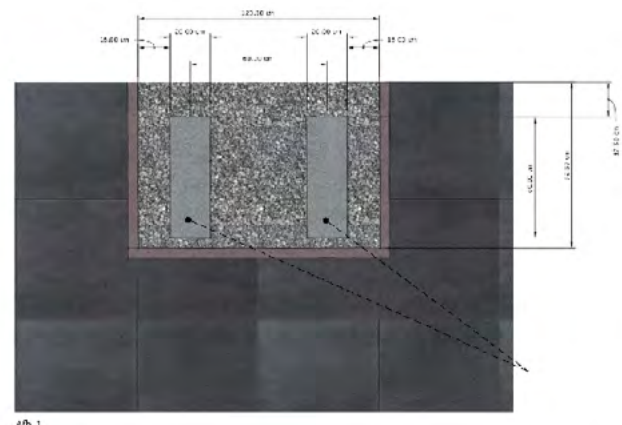


## G. Base Size

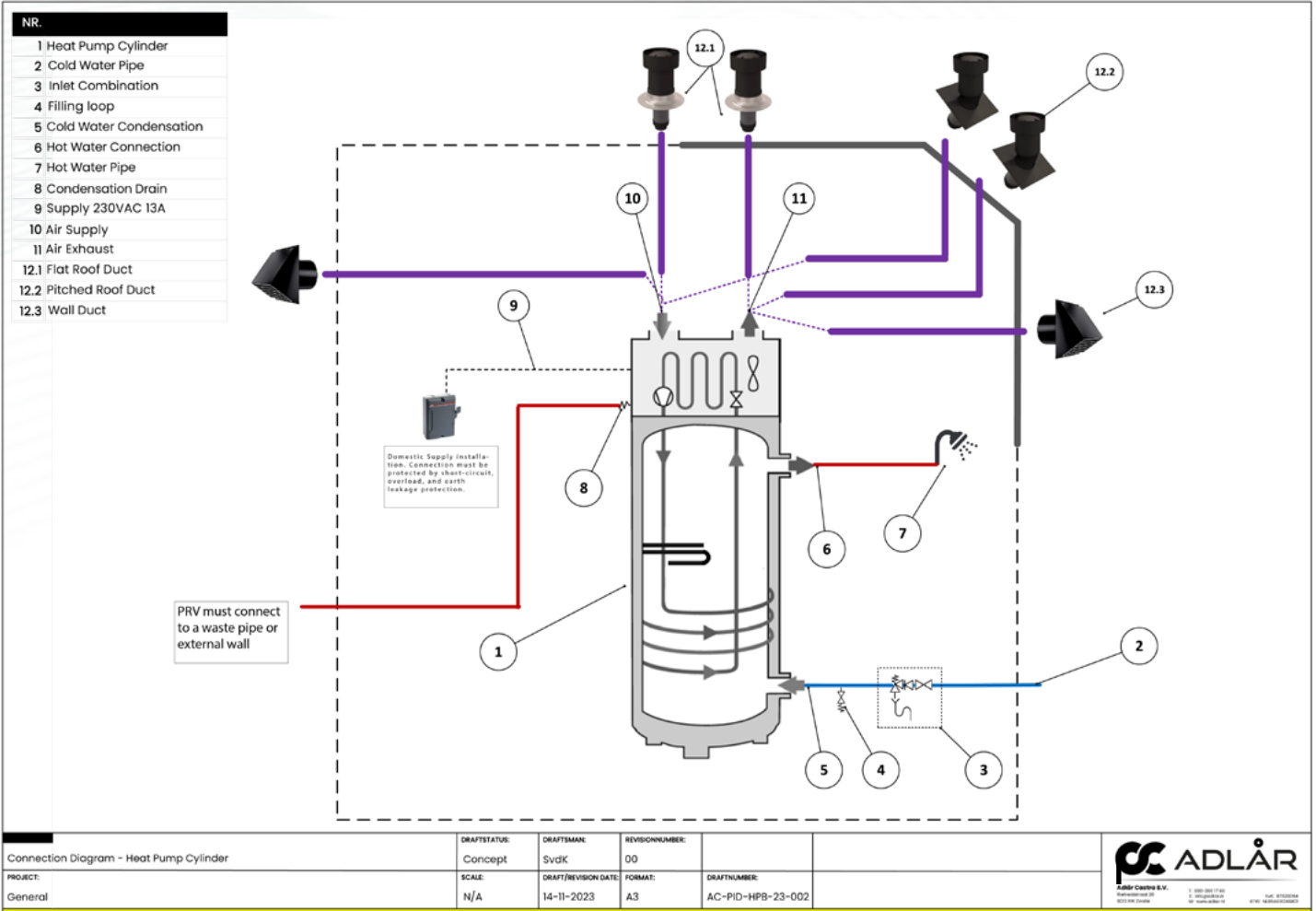
### 6 & 10 kW AURORA II



### 14kW AURORA II



## 4 Requirements - Cylinder



### A. Pipework Overview

In order to ensure the effective installation of your air source heat pump cylinder, we require the following pipework to be in place at the location of the cylinder.

1. Hot Feed: Pipework to supply your hot water faucets. Please ensure all faucets are capped or taps installed in advance.
2. Balanced cold feed - Pipework with an accessible lever valve to allow us to isolate the cold water supply (ON/OFF).
3. PRV Pipework - Pressure and temperature relief pipework must be installed and routed appropriately.

If you are in any doubt about these requirements, our surveyor or your sales representative will be happy to assist.



## B. Ducting Overview

Our cylinders require external air ductwork. Due to recent Ofgem regulations, both the intake and exhaust air must now be ducted directly to the outside environment.

Long duct runs should be installed in advance of our installation date to ensure a smooth installation.

Options for venting include:

1. External wall venting

- Rigid ductwork passing directly through an external wall, terminating with an external grille.
- Ensure the vent location is clear of obstructions and meets clearance requirements.

2. Loft with soffit vents

- Ductwork routed into the loft space and terminated via soffit vents, allowing airflow to the outside.
- Soffit vents must be adequately sized and protected against water ingress and pests.

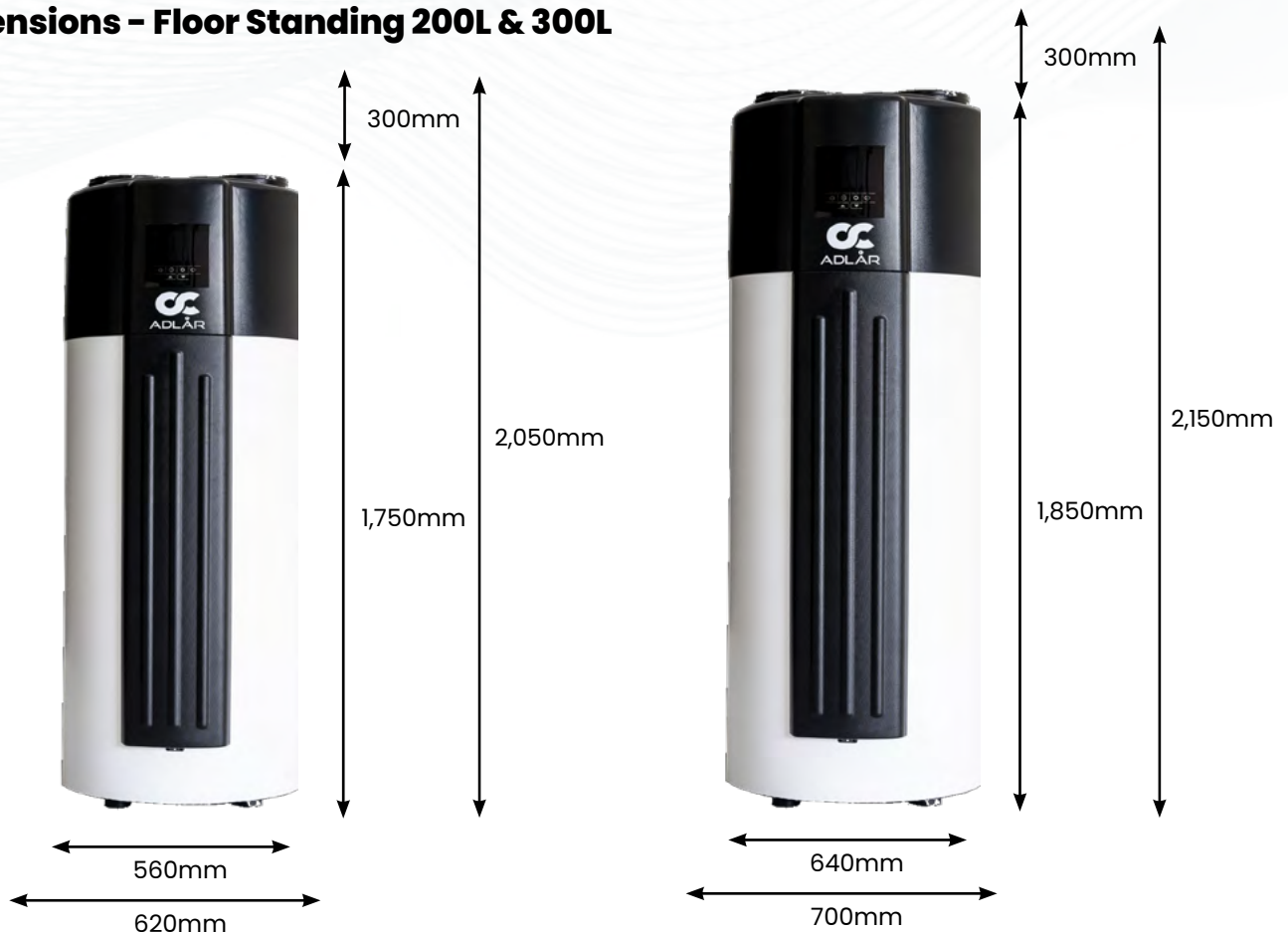
3. Flat roof venting

- Ductwork terminated through a flat roof using a properly weather-sealed flat roof vent terminal.
- Ensure the vent is installed in accordance with flat roof waterproofing standards.

4. Loft with tile vents

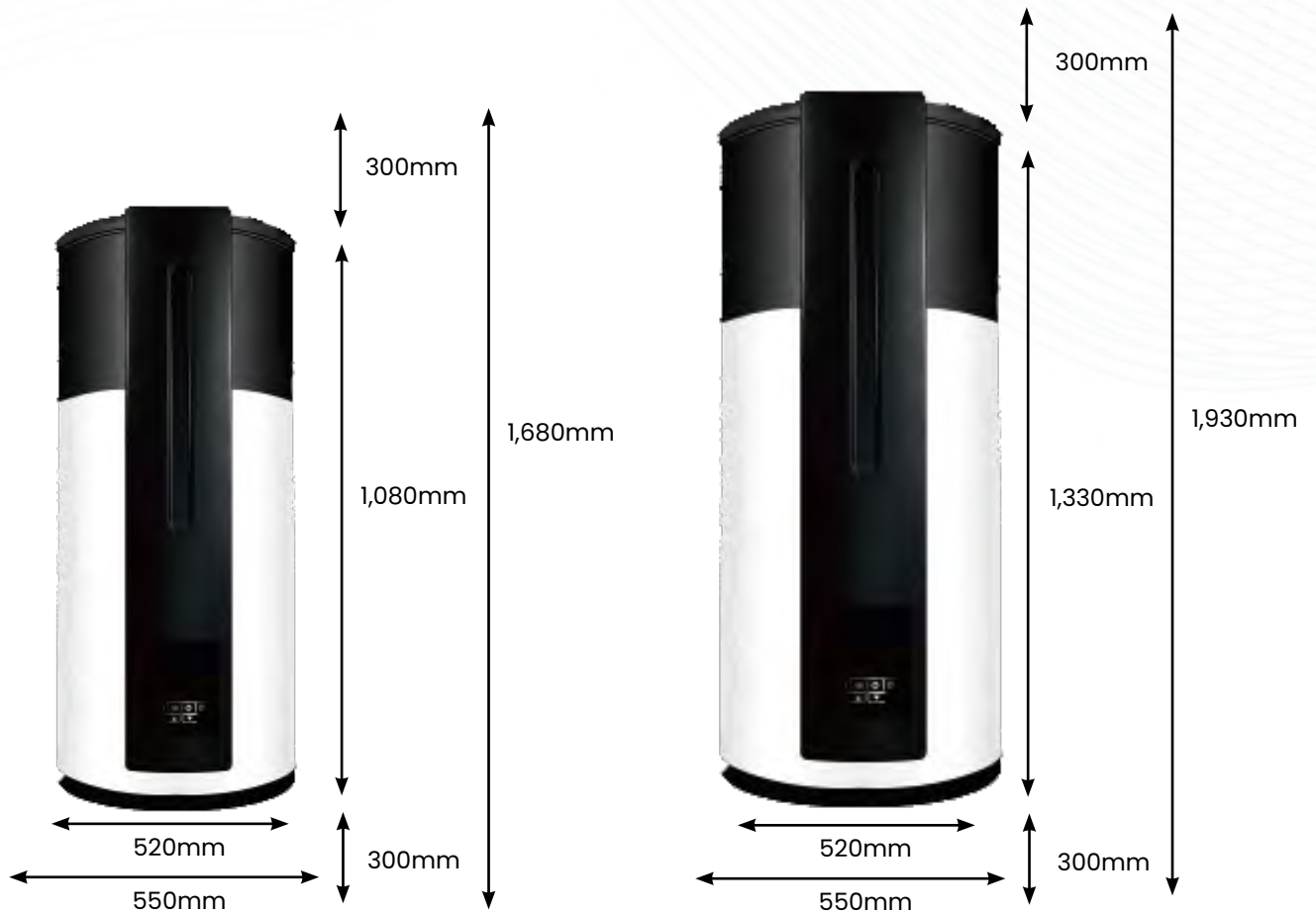
- Ductwork routed into the loft and terminated via purpose-made tile vents installed in the pitched roof.
- Tile vents must be designed for ventilation and fitted to ensure weatherproofing.

## C. Dimensions - Floor Standing 200L & 300L





## D. Dimensions - Wall Hung 80L & 120L





## 5 Additional Components



### 2x 18ltr expansion vessels

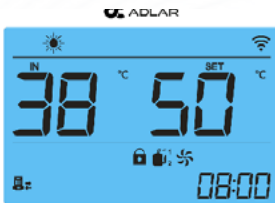
O/D	Height
270mm	410mm



### 1x STAINLESS STEEL PIPE (PRE-INSULATED)

#### Supply & Return

~60mm O/D x2 (allow for 130mm width, 60mm height)



### 1x Display

5 core signal cable from heat pump location to desired location



## Buffer Tanks

Depending on the system requirements, an inline buffer tank may be recommended.

Please contact your sales representative for the size requirements for your property.

A buffer tank in a heat pump system is typically used to prevent short cycling and maintain system stability when heating zones open and close frequently. But in our setup, this isn't necessarily needed based on personal preference:

#### A. Consistent Flow = Stable Operation:

By keeping major heating zones open at all times during operation. This ensures a consistent flow of water through the system, which is exactly what the heat pump needs to run efficiently and reliably.

#### B. Buffer Tanks Solve a Problem We've Avoided:

Buffer tanks are mainly required when zones open and close frequently, causing inconsistent flow and potential short cycling. Since we've designed the system to avoid that issue altogether, the buffer tank becomes redundant.

#### C. Low Flow Temperature = Maximum Efficiency:

Heat pumps are most efficient when operating at the lowest possible flow temperature. If zones are constantly opening and closing, it usually means the system is running too hot and overheating rooms. That leads to inefficiency and overcompensation. By keeping the temperature optimized and steady, and the main zones open, we allow the heat pump to run in its optimal range.





## 6 Electrical Requirements

### A. Outdoor Unit

#### Power Availability:

There must be power availability from your fuse board to power the heat pump. A power cable must be run to the heat pump from a separate earthed circuit breaker on the fuse board. No other connections can share this circuit.

The minimum required circuit requirements are as follows:

- ☒ Aurora II 6kW                    16A type B
- ☒ Aurora II 10kw                    20A type B
- ☒ Aurora II 14kW                    32A type B
- ☒ Aurora II 14kW (3~)            16A type B 3P+N

#### Fuse Box

The fuse box must also be fully functional and installed in accordance with the BS 7671 + P standard. If this is not the case, Adlår will cease its work and only resume after the customer has provided a meter cupboard in accordance with the BS 7671 + P standard, with sufficient capacity for the heat pump.

Adlår will take care of the above if the customer requests.

#### Supply Cable:

The specifications for the supply cable from the meter cupboard to the heat pump are as follows:

- ☒ 6kW:                                    Armoured 3-core cable (3x2,5mm<sup>2</sup>)\*
- ☒ 10kW & 14 kW:                    Armoured 3-core cable (3x4mm<sup>2</sup>)\*
- ☒ 14 kW-3 phase:                    Armoured 5-core cable (5x2,5mm<sup>2</sup>)\*

\*if the cable is run >20m or is at risk of being coiled during the run, please discuss with us or a qualified electrician to determine the cable size and routing, if in doubt you should upgrade the size.

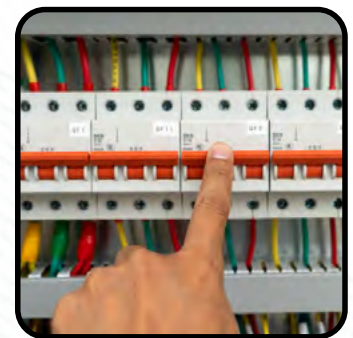
#### Power Requirements

The power requirements of an AURORA II heat pump are as follows:

	6kW	10kW	14kW-1
☒ Supply Power	220~240V / 1 / 50Hz		
☒ Max Current	15A	17A	27.5A
☒ Fuse Characteristics	Type B		
☒ Nominal Current	16A	20A	30A
☒ Pole	1P + N		
☒ Nominal Fault Current	30mA		

#### Rotary Switch

The supply cable needs to connect into a isolated rotary switch on the outside wall where the heat pump will be located.



Fuse Board



Armoured 3-core cable



Rotary Isolator Switch

## B. Indoor Equipment

### Power Availability:

We need power availability from your fuse board to power our indoor equipment. A power cable must be able to be run to the equipment from a separate earthed circuit breaker on the fuse board.

The minimum required circuit requirements are as follows:

#### Connection 1:

- ☒ ASHP Cylinder 230V 50Hz - 13A
- ☒ Thermostat 230V 50Hz - 3A
- ☒ Total (Thermostat & Cylinder) Shared 16A type B fuse box (RCBO) connection

#### Connection 2:

- ☒ Buffer Tank Immersion 16A type B fuse box (RCBO) connection

### Fuse Box

The Fuse Box must also be fully functional and installed in accordance with the BS 7671 + P standard. If this is not the case, Adlår will cease its work and only resume after the customer has provided a meter cupboard in accordance with the BS 7671 + P standard, with sufficient capacity for the heat pump.

Adlår will take care of the above if the customer requests.

### Supply Cable:

The specifications for the supply cable from the meter cupboard to the heat pump are as follows:

- ☒ 16A RCBO Supply: Armoured: 3-core cable (3x2,5mm<sup>2</sup>)\*

\*if the cable is run >10m, or is at risk of being coiled during the run, please discuss with us or a qualified electrician to determine the cable size and routing, if in doubt you should upgrade the size.

### Connections:

The connections of the indoor equipment is as follows:

- ☒ Connection 1 (Cylinder & Thermostat) 20A double-pole contactor in series with supply
- ☒ Connection 2 (Immersion) 20A double-pole contactor in series with supply

#### Connection 1:

- ☒ ASHP Cylinder Separate Fuse Spur
- ☒ Thermostat Separate Fuse Spur
- ON/OFF command back to heat pump

#### Connection 2:

- ☒ Buffer Tank Immersion Relay switch with wiring back to the heat pump for ON/OFF control

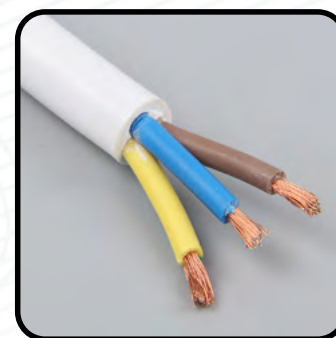
### Power Requirements:

The maximum power requirements of the indoor equipment is as follows:

- ☒ ASHP Cylinder 9.41A
- ☒ Buffer Tank Immersion 13.7A
- ☒ Thermostat 3A
- ☒ Total 26.11A



Fuse Board



Armoured 3-core cable



20A double-pole contactor



Fuse Spur Switch



ADLÅR