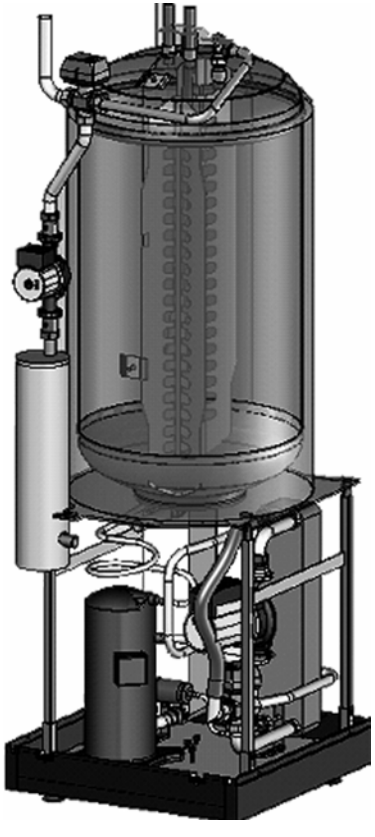
Next generation air/water HP

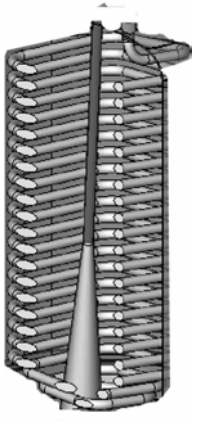
Thermia Atria

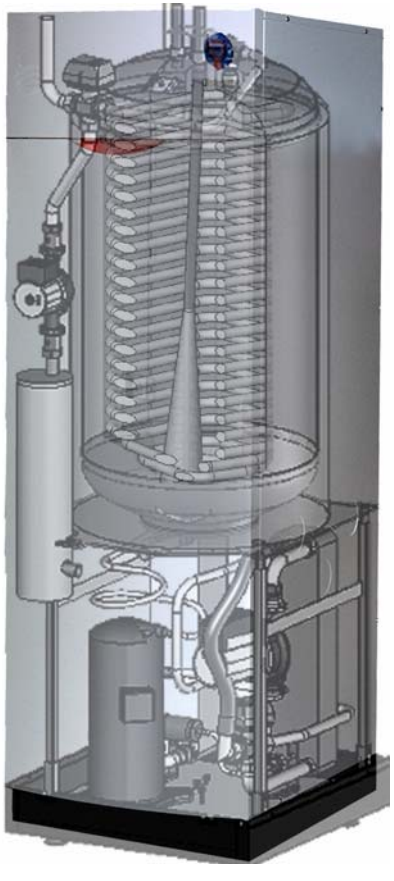
What is Thermia Atria?

A newly developed air / water heat pump with patent pending hot water tank / defrosting tank.

The outdoor unit is the same as the present Aer version.







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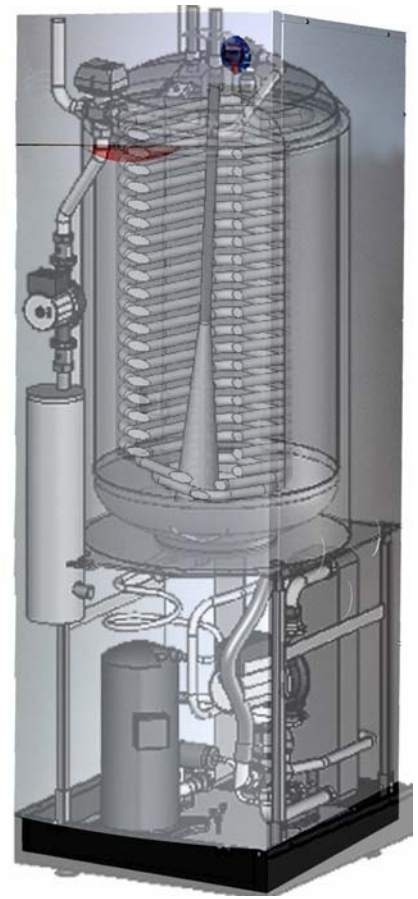


Brief summary of Atria:

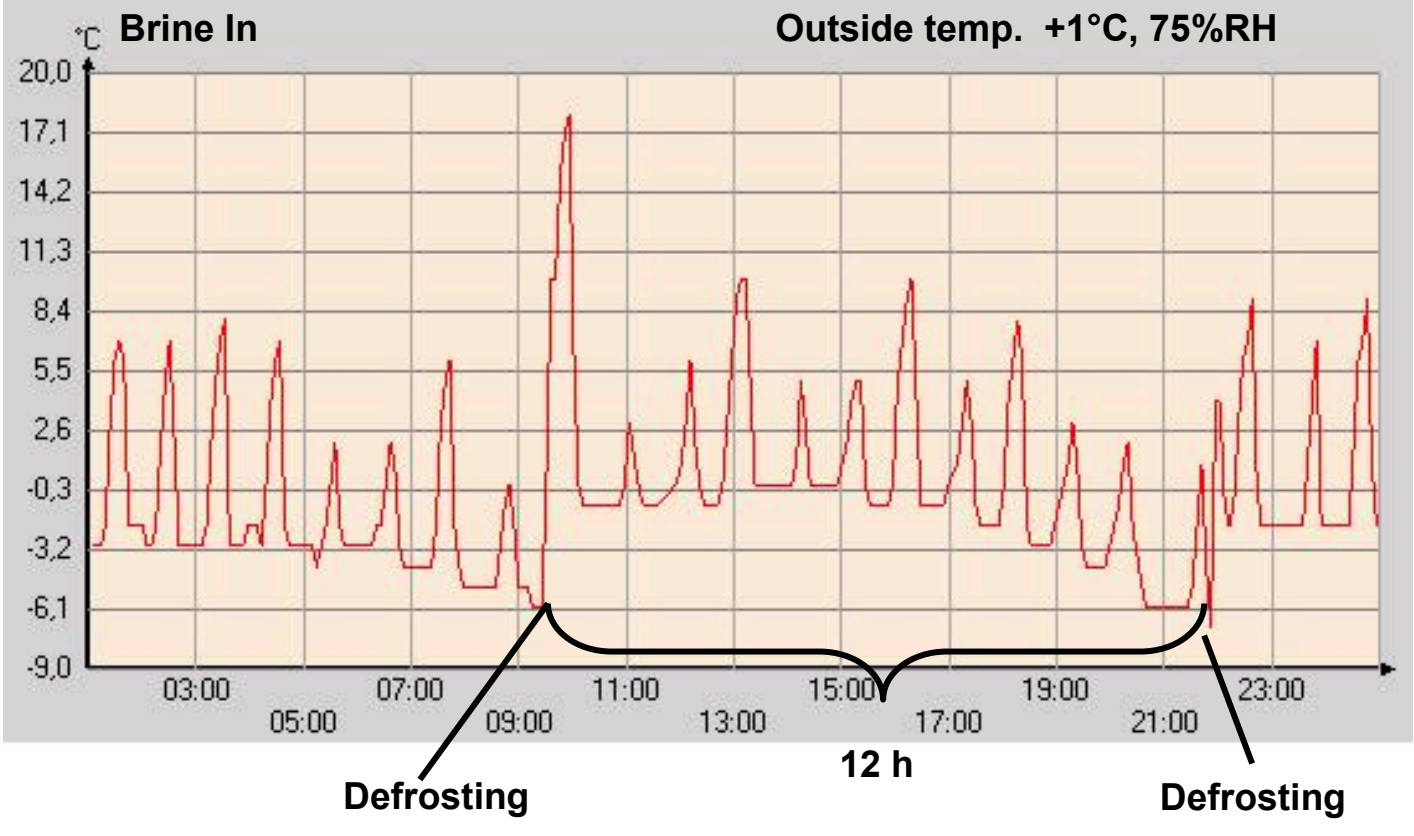
- Compressor operational down to -20
- ZH compressor and R404A
- 180 L hot water tank using TWS technology
- Defrost tank in the double shell
- Completely on demand defrosting using a shunt valve (lower cost/defr than Thermia Aer)
- Integrated additional electric heater.
- Can be used with exhaust air module Thermia Vent
- Prepared for external supplement for heating and hot water
- 6,8,10,12 kW in CU and RF WH
- Thermia Online can be purchased as an option
- Pool control can be purchased as an option
- Same height, width and depth as Diplomat TWS

Defrost when necessary!

We only defrost when it is necessary.

Defrosting is started when the difference between the outside temperature and the incoming brine becomes ”too big”.

The time between 2 defrostings depends on the outside temperature, relative humidity and the time that the compressor has been running.



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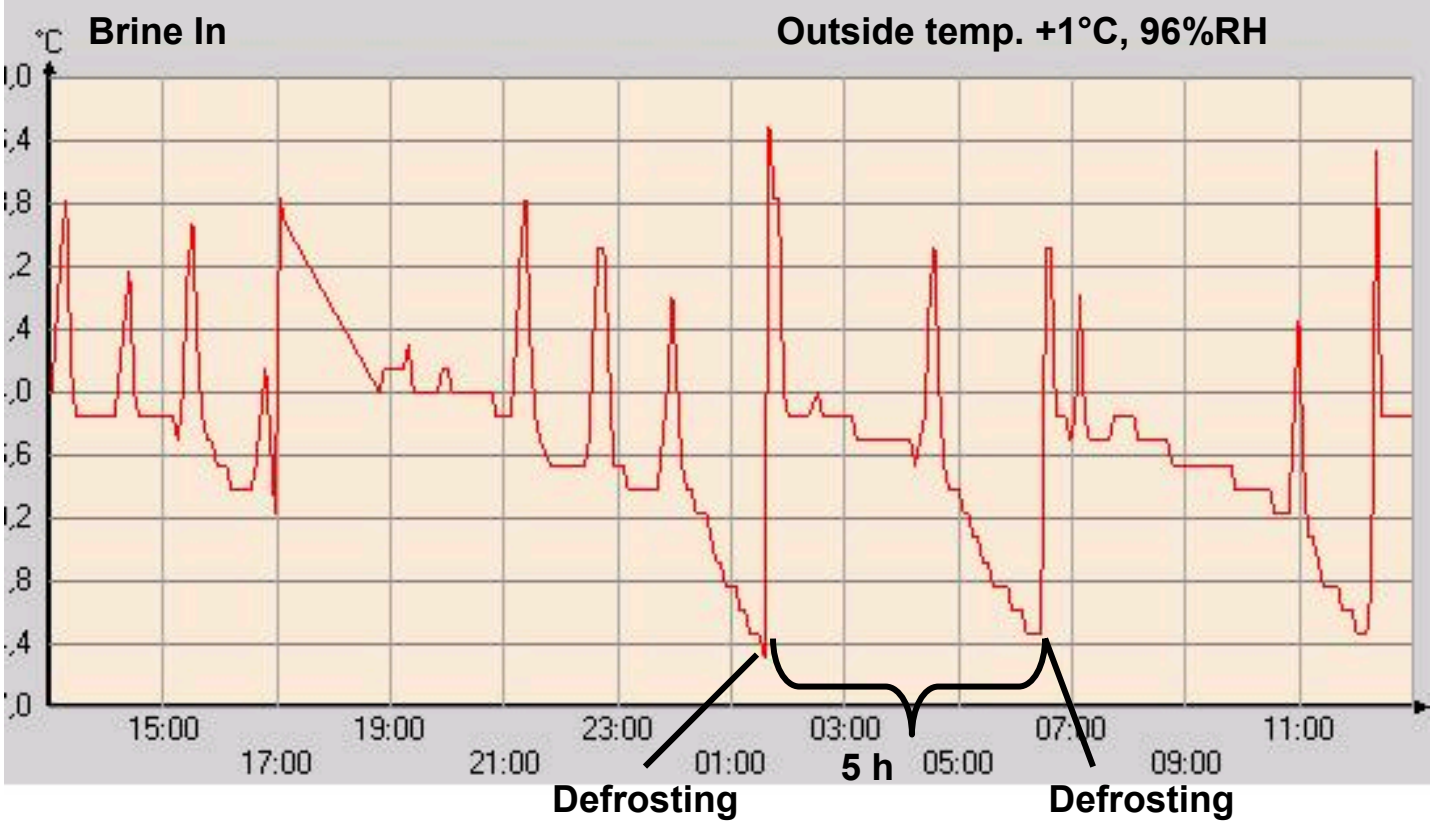
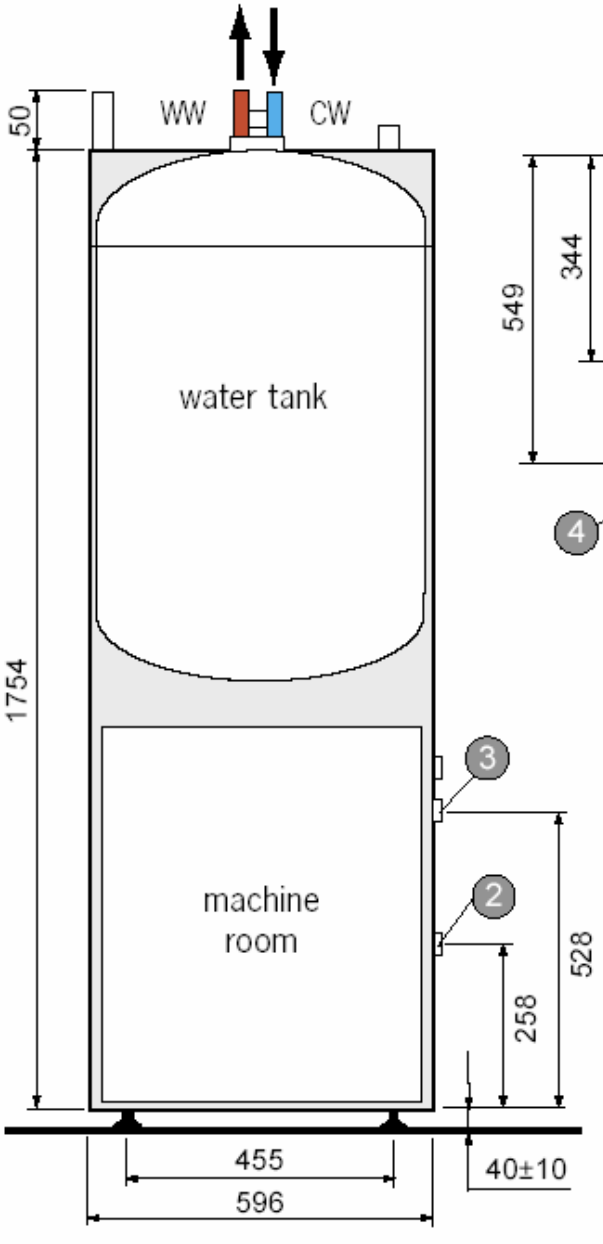
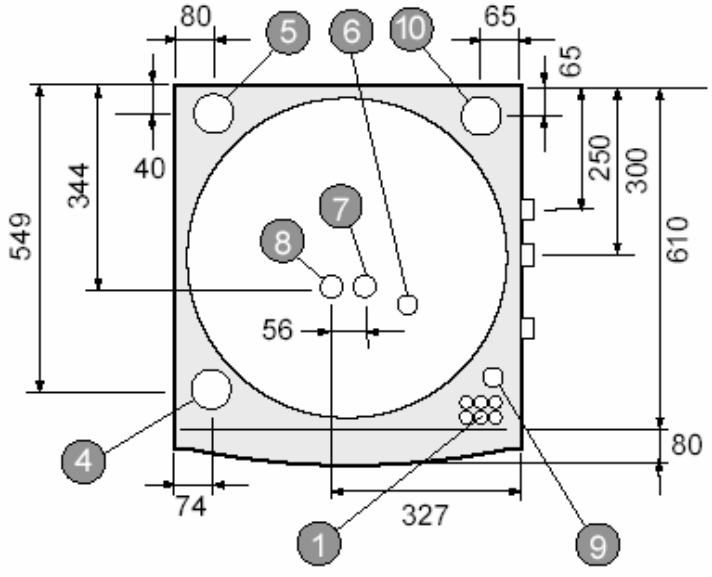


Dimensions and connections



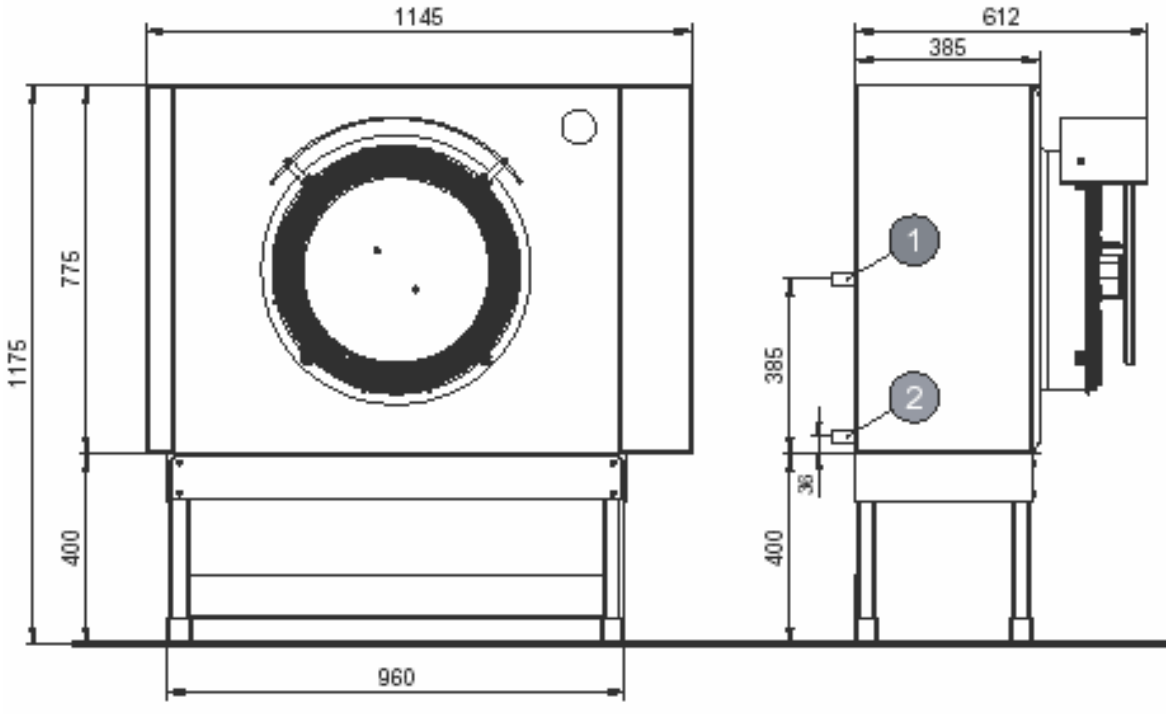


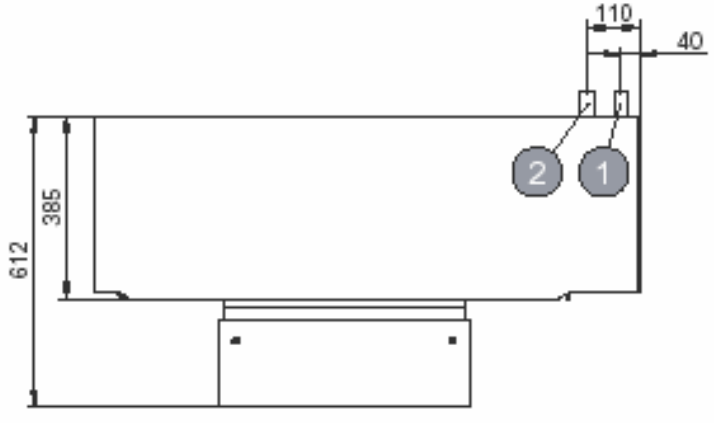
Connections

1. Electrical lead-in for power supply
2. Cooling medium in (to HP)* 28 Cu
3. Cooling medium out (from HP)* 28 Cu
4. Supply to radiators (flow line) 28 Cu
5. Return from radiators (return line) 28 Cu
6. Expansion 22 Cu.
7. Cold water connection (cw) 22 Cu
8. Hot water connection (hw) 22 Cu
9. Lead-in for Thermia Online cable
10. Expansion socket outer sleeve R25 int.

*) Connection can be made either from right or left.

Dimensions and connections

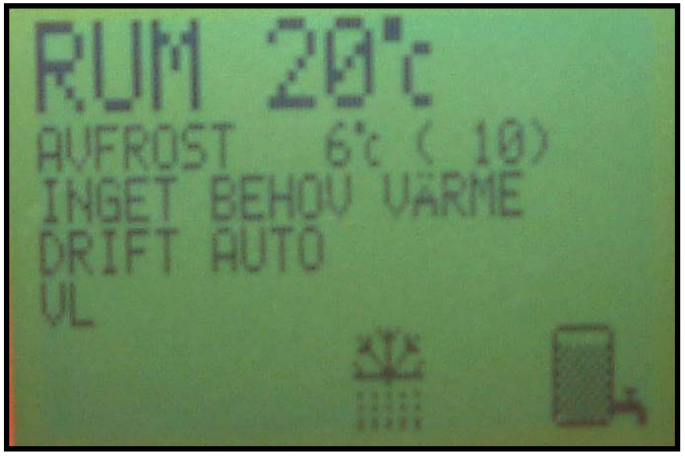




Connections

1	Cooling medium in (from HP out)	28 Cu
2	Cooling medium out (to HP in)	28 Cu

Optimised control



The control in Atria is a combination of the Diplomat and Aer controls which have been further developed and optimised.

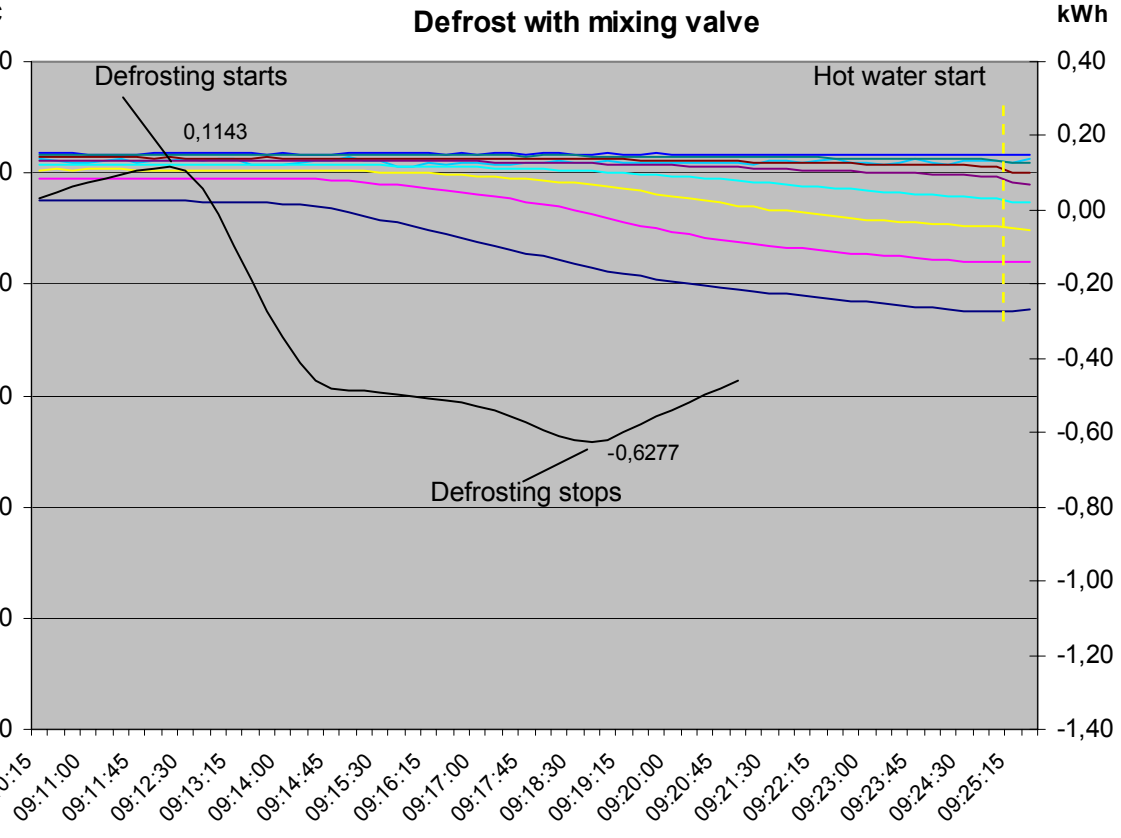
Compared with Diplomat controls some new graphic symbols have been added, such as indication when defrosting is underway and what speed the fan is running at.

The fan in the outside section can run at high or low speed depending on the outside temperature.

<= +12°C it will be running with high speed >+12°C it will be running with low speed.

When the controls request defrosting the shunt valve opens and sends out fluid at approximately 17 degrees to the Brine out section which now starts to defrost. The defrosting stops when the fluid which comes in the return Brine In reaches a certain temperature (approx 14°C).

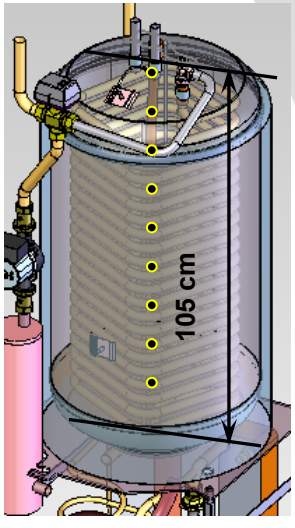
ptimised defrosting Atria (with mixing valve)



Tank top
Tank 10cm dow n
Tank 20cm dow n
Tank 30cm dow n
Tank 40cm dow n
Tank 50cm dow n
Tank 60cm dow n
Tank 70cm dow n
Tank 80cm dow n
Energy defrost

0.742 kWh

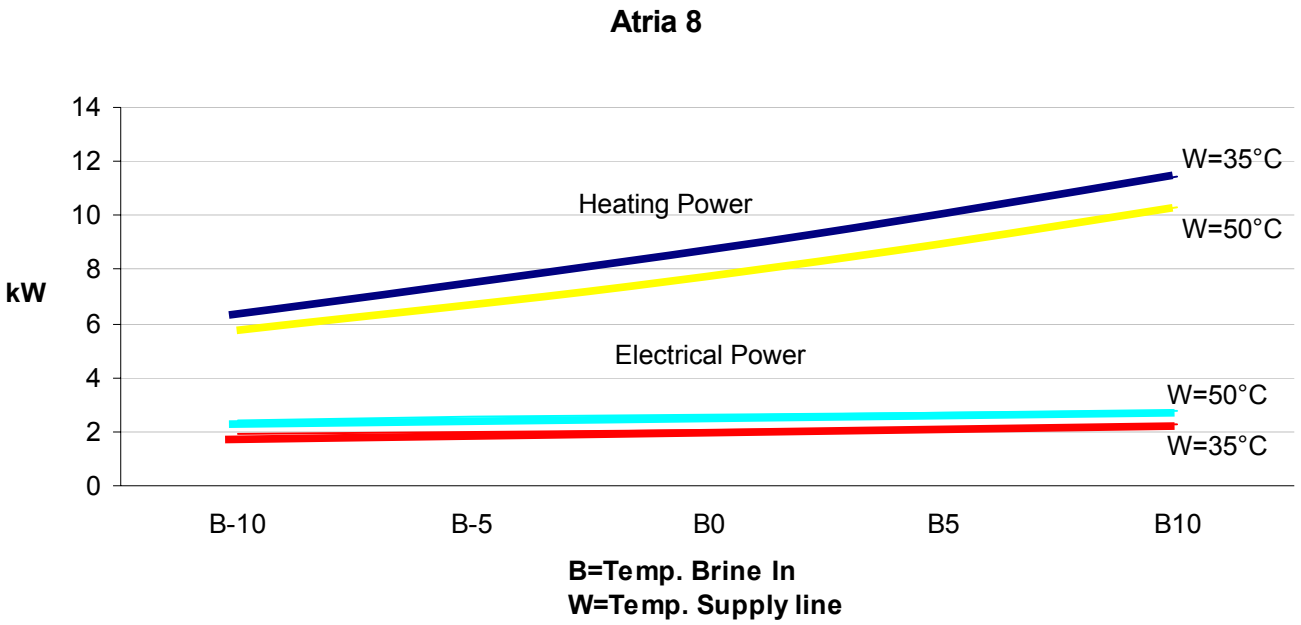
(0,1143+0,6277)

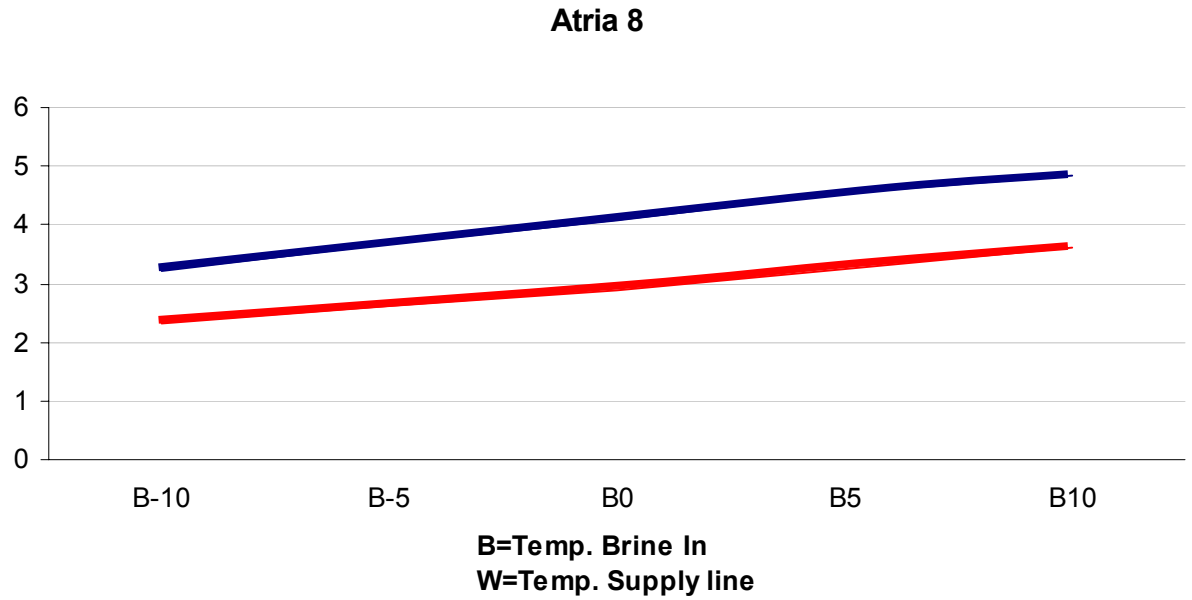


Defrosting time 6.5 min

Energy consumption per defrosting 0.74 kWh

Measured values Atria 8





reliminary measured values Atria

alues measured at Thermia Lab.

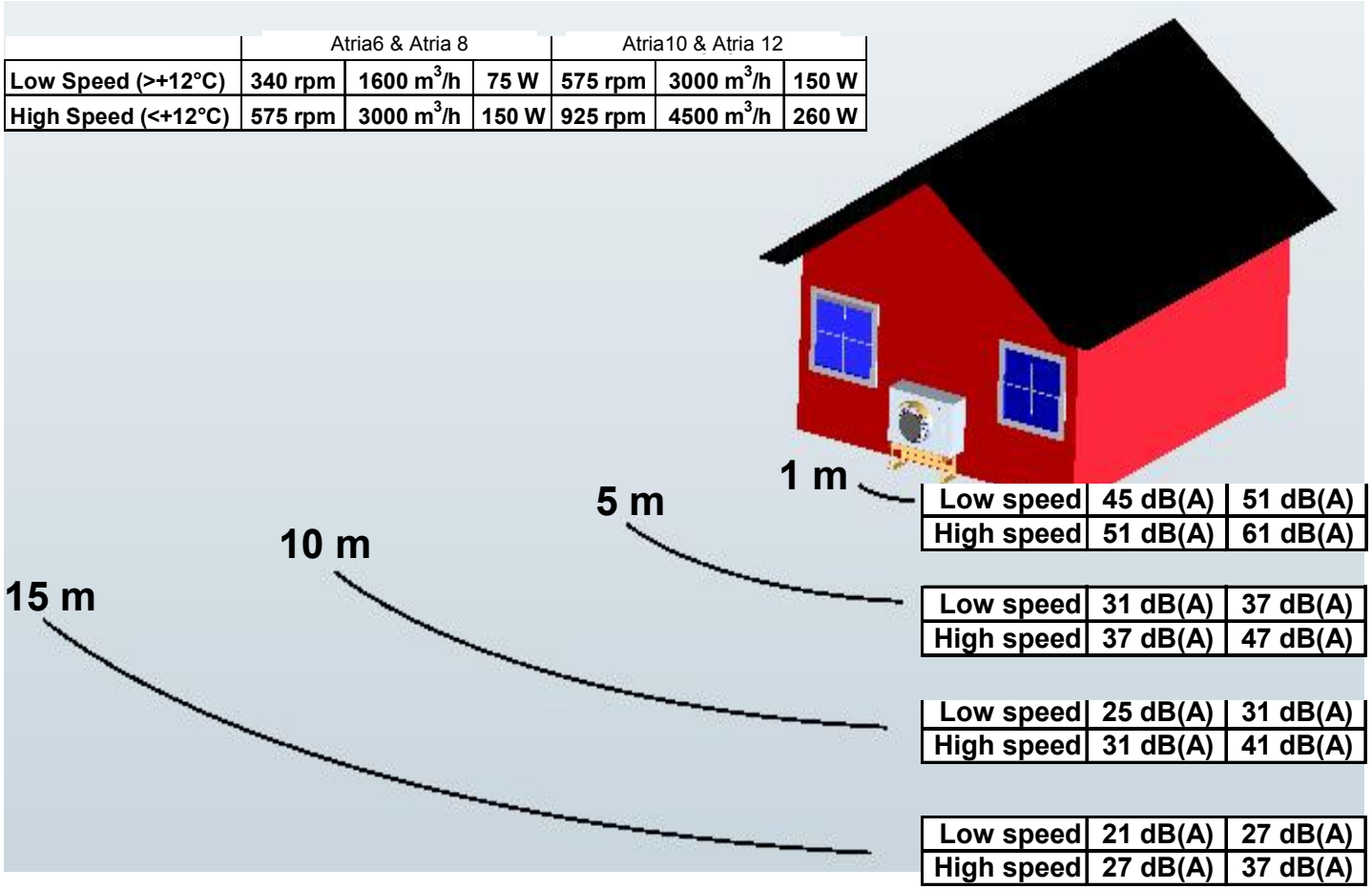
	Atria6			Atria8			Atria10			Atria12		
KB in / FL	Tillförd*	Avgiven	COP	Tillförd*	Avgiven	COP	Tillförd*	Avgiven	COP	Tillförd*	Avgiven	COP
+10/35	2,1	8,2	3,9	2,8	11,4	4,1	3,35	13,8	4,1	3,75	15,7	4,2
+5/35	2,1	7,1	3,4	2,6	10,1	3,9	3,25	12,1	3,7	3,65	14	3,8
0/35	2	6,2	3,1	2,6	8,7	3,3	3,15	10,9	3,5	3,45	12,2	3,5
-5/35	2	5,3	2,7	2,5	7,5	3,0	3,05	9	3,0	3,45	10,5	3,0
-10/35	1,9	4,5	2,4	2,4	6,4	2,7	2,95	7,7	2,6	3,35	9,1	2,7
+10/50	2,6	7,4	2,8	3,3	10,3	3,1	4,05	12,3	3,0	4,55	14,3	3,1
+5/50	2,6	6,5	2,5	3,2	9	2,8	3,95	10,7	2,7	4,45	12,7	2,9
0/50	2,6	5,7	2,2	3,1	7,8	2,5	3,85	9,5	2,5	4,35	11	2,5
-5/50	2,5	4,9	2,0	3	6,7	2,2	3,75	8,2	2,2	4,25	9,6	2,3
-10/50	2,4	4,2	1,8	2,9	5,8	2,0	3,65	7	1,9	4,15	8,4	2,0

*Inkl. båda cirkpumparna+fläkten i utedelen

ound level Thermia Atria outdoor unit.

The following noise levels have been measured at SEMKO according to EN ISO 3744

	Atria6 & Atria 8			Atria10 & Atria 12		
Low Speed (>+12°C)	340 rpm	1600 m^3/h	75 W	575 rpm	3000 m^3/h	150 W
High Speed (<+12°C)	575 rpm	3000 m^3/h	150 W	925 rpm	4500 m^3/h	260 W



Low speed	45 dB(A)	51 dB(A)
High speed	51 dB(A)	61 dB(A)

Low speed	31 dB(A)	37 dB(A)
High speed	37 dB(A)	47 dB(A)

Low speed	25 dB(A)	31 dB(A)
High speed	31 dB(A)	41 dB(A)

Low speed	21 dB(A)	27 dB(A)
High speed	27 dB(A)	37 dB(A)

Added values Thermia Atria

Outdoors

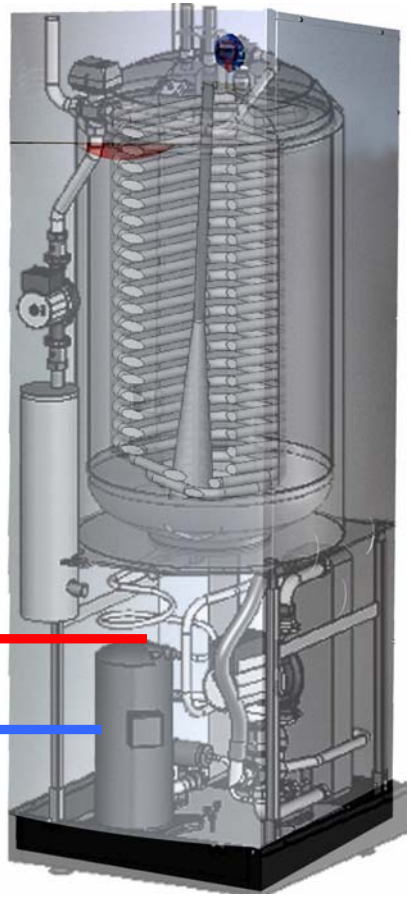
Tolerates -20°C

Cannot freeze in event of power cut.

No heat loss outside

Operationally reliable, minimum of ensitive components located outside.

Indoors



- Only one "module".
- Integrated additional electrical heater
- Completely on demand defrosting.
- TWS techology, 180L hot water tank
- Can be run with external additions such as Pellets, Oil, Log and Electric boilers
- Small losses in the system which benefit the house.
- Lower investment cost than geothermal heat
- Thermia On Line available as an accessory.
- Pool control as an accessory.

Thermia Atria

No unnecessary energy loss outside the house. Any small losses occur within the house.

The system's hot side inside the house and cold side outside the house

Small energy loss, but inside the house.

No energy loss

Other manufacturers:

We carried out tests that showed that these systems have approximately 400W of energy loss at outside temperatures of –10°C.

Energy losses from heat pump and pipe system.