

Enevator Store

Award-winning heat pump water heater

CAWH 8-455-6

CAWH 8-455-9

CAWH 8-455-12

The Enevator Store is **one of the world's most powerful heat pump water heaters**, with a capacity of 445 litres and a power output of 8 kW, delivering a very high hot water flow rate. This unit delivers significant energy savings on hot tap water thanks to its heat pump technology.

The Enevator Store is a Plug & Play water heater. Installation is straightforward as it is a monoblock system. Furthermore, during operation, this water heater automatically adjusts to achieve the highest possible efficiency depending on hot water demand.

The unit is suitable for commercial applications such as restaurants, schools, sports and leisure facilities, retail premises, campsites and other applications where a hot water flow rate of up to 1,000 litres at 38°C in the first hour can be achieved



Features and options

Highest achievable efficiency

The Enevator Store has 3 operating modes:

- Efficiency
- Hybrid
- Electric

The Enevator Store operates most efficiently in Efficiency mode. In this mode, the heat pump is used predominantly. Efficiency mode is ideal when a large amount of hot water is needed once or twice a day and there is sufficient time to reheat the water the rest of the time. The electric backup only kicks in when the heat pump cannot extract enough heat from the ambient temperature. Hybrid mode provides optimum comfort. The appliance responds to how the tap is used and activates an electric heating element as soon as the hot water in the tank begins to fall below a certain level, to ensure that hot water is always available.

All-electric

The Enevator Store is an ‘all-electric’ product. Provided the electricity is generated from renewable sources (wind, solar, etc.), no fossil fuels are used, meaning this heat pump water heater contributes to the 2030 energy transition targets: a 55 per cent reduction in CO₂ emissions compared with 1990 levels.

Ventilation

An air-to-water heat pump draws the energy needed to heat water from the ambient air. It effectively extracts heat from the air and transfers it to the water, causing the water to become warmer. The air leaving the unit after this process is therefore considerably cooler and will cool the space around the Enevator Store. The extent to which this air cools the space depends on the size of the room where the unit is located and also on the ventilation in that room.

The colder the air entering the unit, the lower the heat pump’s efficiency. It is therefore very important to give careful consideration to where a heat pump is installed, particularly if it is intended for indoor use. The dry, cold air produced as a ‘by-product’ of the Enevator Store is also often used to cool or dehumidify spaces. Think of gyms, server rooms and places where machines produce an undesirable amount of warm air. That’s doubly sustainable.

If you can’t make use of the cold air, it’s important to ensure proper ventilation.

Integrated design, small floor space required
Pre-charged refrigerant circuit for quick and easy installation
Microchannel heat exchanger wrapped around the tank
445-litre enamelled storage tank fitted with a magnesium anode
8 kW capacity, expandable to a maximum of 20 kW using 6, 9 or 12 kW electric backup elements
Various operating modes: efficiency, hybrid, electric
Up to 65°C in efficiency and hybrid modes, and 82°C using backup elements only
Large LCD touchscreen for mode selection, displaying operational information, error messages and diagnostics
Produces cooler, dehumidified air as a by-product

Ecodesign specifications

Model		CAWH 8-455-6	CAWH 8-455-9	CAWH 8-455-12
Capacity profile	-	XL	XL	XL
Energy efficiency class	-	A+	A+	A+
Energy efficiency (under average climate conditions)	%	132	132	132
Daily electricity consumption (under average climatic conditions)	kWh	6.01	6.01	6.01
Annual electricity consumption (under average climatic conditions)	kWh/year	1272	1272	1272
Daily fuel consumption (under average climatic conditions)	GJ/year	0	0	0
Annual fuel consumption (under average climatic conditions)	kWh GCV	0	0	0
Default setpoint value	°C	50	50	50
Noise level Lwa (indoor)	dB(A)	59	59	59

Technical specifications

Model	CAWH 8-455-6		CAWH 8-455-9	CAWH 8-455-12
Technical data				
Heat pump				
Nominal input (heat pump compressor) ¹	kW	2.2	2.2	2.2
Heat pump heating capacity ¹	kW	8	8	8
COP (hot water in accordance with EN 16147:2017)	-	Up to 3.2		
SCOP (hot water)	-	Up to 3.2		
Refrigerant		R134A		
Refrigerant quantity	g	1850		
Noise level (in accordance with EN 12102-2)	dB(A)	59		
Electrical specifications				
Supply voltage		400V / 3P + N / 50Hz		
Power consumption (peak)	kW	9.1	11.7	15.1
Power of backup element 1 (peak)	kW	3	4.3	6
Power of backup element 2 (bottom)	kW	3	4.3	6
Maximum current L1 – heat pump	A	9.6	9.6	9.6
Maximum current L2 – element 1, control unit & fans	A	16.9	22.5	30.0
Maximum current L3 – element 2	A	13.0	18.7	26.1
Maximum current (L2)	A	16.9	22.5	30.0
IP rating	-	IPx4		
General				
Empty weight	kg	229		
Tank capacity	L	445		
Maximum floor load	kg	684		
Number of magnesium anodes		1		
Control temperature in efficiency or hybrid mode	°C	35 .. 65		
Control temperature in electric mode	°C	35 .. 82		
Default operating mode (setpoint)	°C	Efficiency mode (50°C)		
Ambient temperature	°C	-7...43		
Maximum operating pressure	kPa (bar)	800(8)		
Ambient temperature for the heat pump	°C	-7 ~ 43		
Ambient temperature for the unit	°C	-10 to 43		

1) The heat pump's performance figures are average values under the following conditions:

"20 (dry bulb temperature) / 15 (wet bulb temperature) °C ambient temperature and 15 °C to 55 °C water temperature"

Ventilation using indoor air

Model		CAWH 8-455-6	CAWH 8-455-9	CAWH 8-455-12	CAWH 8-455-6	CAWH 8-455-9	CAWH 8-455-12
Tcold = 10°C / Tset = 65°C		EFFICIENCY MODE			HYBRID MODE		
Instantaneous hot water capacity at $\Delta T=28$ K	ltr.	590	590	590	590	590	590
30 mins $\Delta T=28$ K	ltr.	690	710	730	750	780	810
60 min. $\Delta T=28$ K	ltr.	800	830	860	1000	1040	1070
90 min. $\Delta T=28$ K	ltr.	910	950	990	1250	1300	1340
120 min. $\Delta T=28$ K	ltr.	1020	1070	1130	1510	1570	1600
Heating time $\Delta T=28$ °C	min.	87	81	73	50	46	42
Tapping capacity, direct $\Delta T=50$ K	ltr.	260	260	260	260	260	260
30 mins $\Delta T=50$ K	ltr.	300	300	300	330	340	350
60 min. $\Delta T=50$ K	ltr.	350	350	360	460	480	490
90 min. $\Delta T=50$ K	ltr.	390	400	410	600	620	630
120 min. $\Delta T=50$ K	ltr.	430	450	470	730	760	780
Heating time $\Delta T=50$ °C	min.	155	145	131	89	81	75

* Tap water volumes at a constant ambient temperature of +/- 18°C

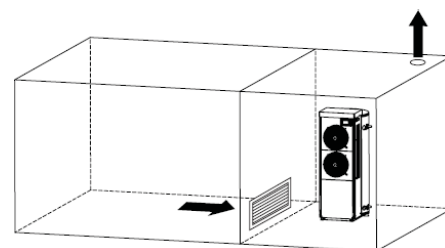
Assumptions

Based on the following assumptions:

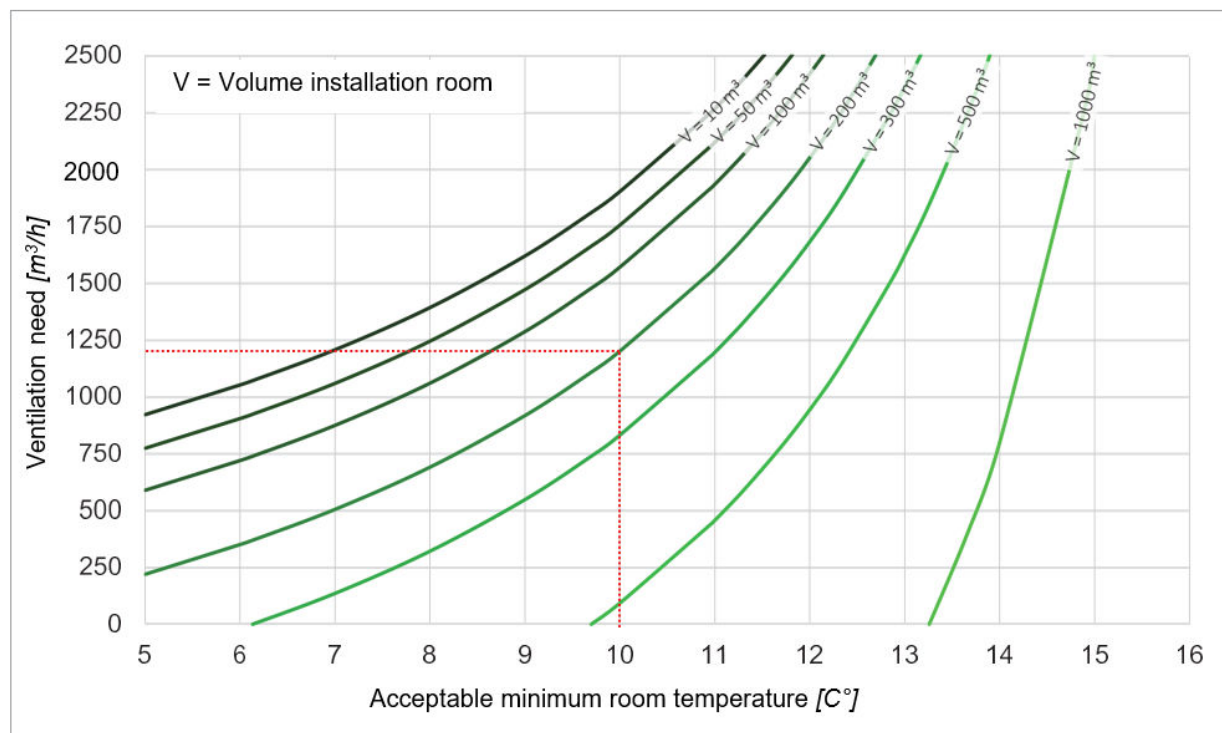
1. A continuous supply air temperature of 18°C
2. A U-value of 1.25 W/m²K
3. $A/V = 2$ for $V < 100$, $A/V = 1$ for $V \geq 100$

A = Air contact area, total surface area of the walls, ceiling and floor V = Total volume of the plant room

A/V = Represents the ratio between the contact area and the volume of air in the plant room



Indicative ventilation requirement, 100% air change with indoor air at 18°C



Example:

Plant room length 7m, width 7m and height 4m. ($V = \pm 200 m^3$). The room temperature must not fall below 10°C. The required ventilation is then at least +/- 1200m³/h

Ventilation with outdoor air

Assumptions

Based on the following assumptions:

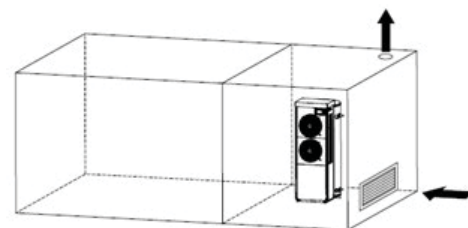
1. A continuous supply air temperature of 10, 15 or 20°C

2. A U-value of 1.25 W/m²K

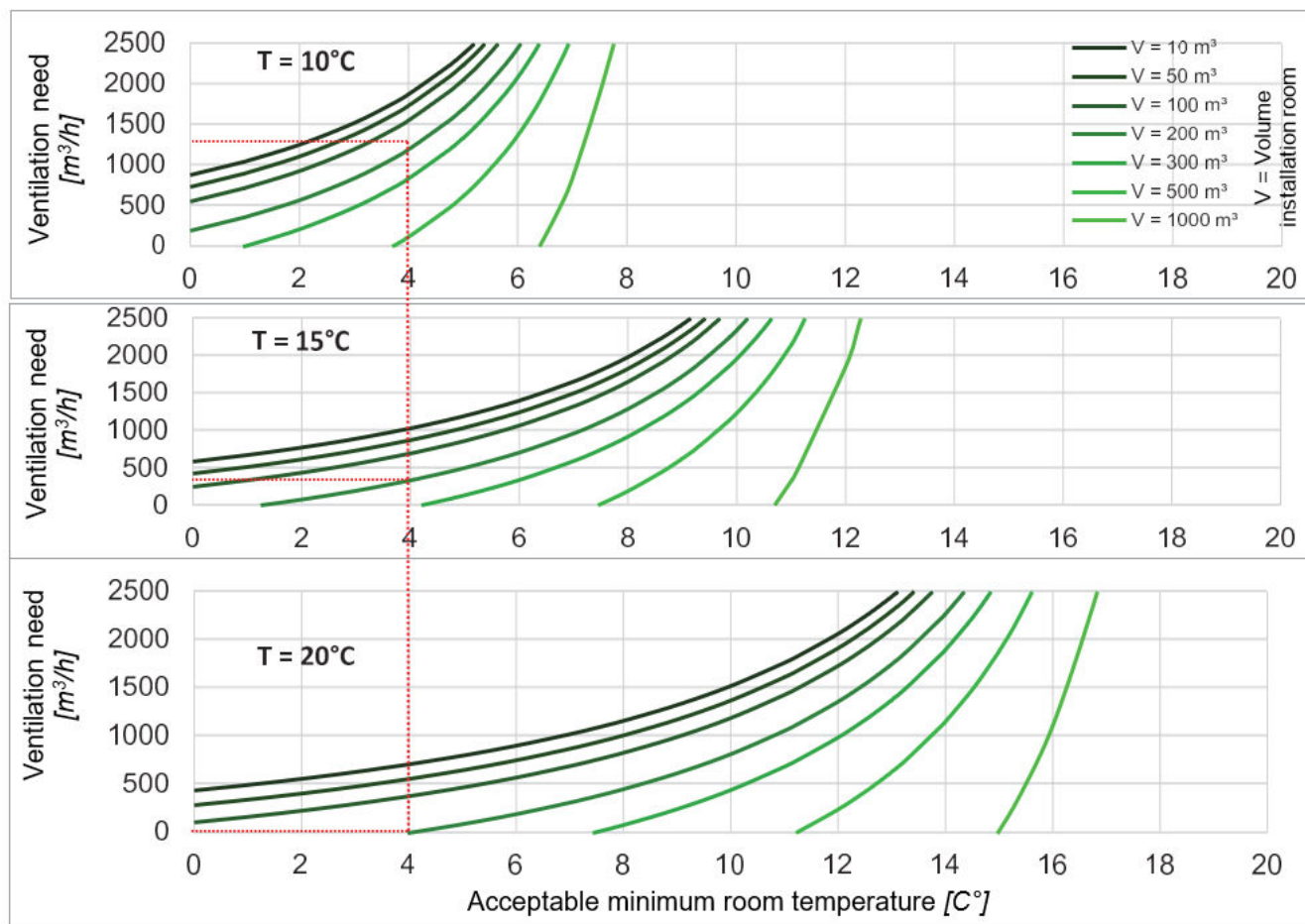
3. $A/V = 2$ for $V < 100$, $A/V = 1$ for $V \geq 100$

A = Air contact area, total surface area of walls, ceiling and floor V = Total volume of the plant room

A/V = Indicates the ratio between the contact surface area and the volume of air in the plant room



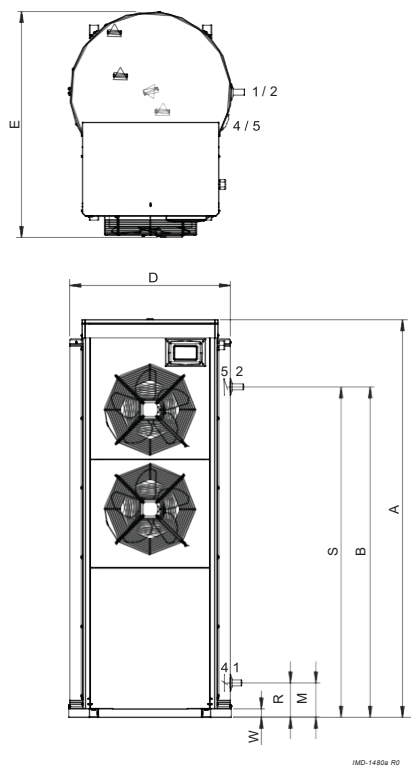
Indicative ventilation requirement, 100% air change with outside air at 10, 15 or 20°C.



Example:

Installation room length 7m, width 7m and height 4m. ($V = \pm 200 \text{ m}^3$). The room temperature must not fall below 4°C. The required ventilation is then at least $\pm 1200 \text{ m}^3/\text{h}$ at 10°C outside, $\pm 350 \text{ m}^3/\text{h}$ at 15°C outside and $\pm 0 \text{ m}^3/\text{h}$ at 20°C outside.

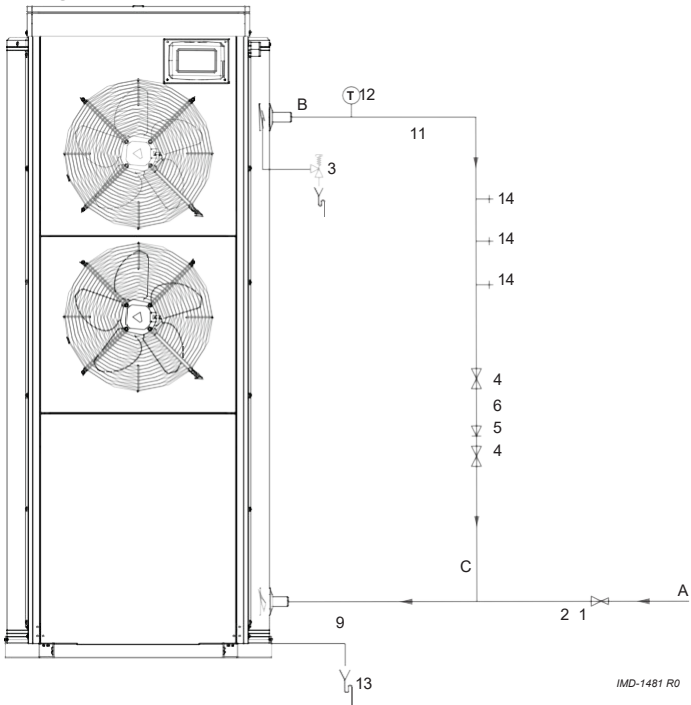
Dimensions



Model		CAWH 8-455	
Length			
A	Height	mm	1770
D	Width	mm	785
E	Depth	mm	995
M	Cold water inlet height	mm	165
B	Hot water outlet height	mm	1470
R	Height of drain tap connection	mm	165
S	Height of T&P valve connection	mm	1470
W	Height of condensate drain	mm	15
Connections			
1	Cold water inlet (internal)	NPT	3/4"
2	Hot water outlet (internal)	NPT	3/4"
4	Drain tap (internal)	NPT	3/4"
5	T&P valve (internal)	NPT	3/4"

Eneuator Store

Installation diagram



1	Pressure-reducing valve
2	Inlet assembly
3	T&P valve
4	Shut-off valve
5	Non-return valve
6	Circulation pump
9	Drain valve
11	Service valve
12	Temperature gauge
13	Condensate drain
14	Taps
A	Cold water supply
B	Hot water outlet
C	Circulation pipe

Data subject to change NL/0223/CAWH/01
For the disclaimer, see www.aosmith.nl