

EKHWS-B

The DAIKIN ALTHERMA heat pump in combination with the optional domestic hot water tank provide hot water for household usage. The below mentioned data allow a proper selection of the domestic hot water tank size for maximum comfort and efficiency.

(1) Domestic hot water volume:

The available volume of hot water for household usage depends on the physical volume of the tank, on the domestic hot water setpoint temperature and on the temperature spreading in the tank.

Therefore we define the equivalent hot water volume (EHVV).

Definition:

EHVV = the volume of hot water available for domestic usage at a temperature of 40°C.
40°C is considered a comfortable domestic hot water temperature.

Tank	Setpoint temp. (°C)	EHVV (l)	Usage pattern		
			Modest	Medium	High
150L	55	110	-	-	-
	65	150	+	-	-
	75	175	++	+	-
200L	55	160	+	-	-
	65	200	++	+	-
	75	240	++	++	-
300L	55	295	++	++	-
	65	385	++	++	+
	75	435	++	++	++

Grade ++ Excessive availability of domestic hot water.
+ Sufficient availability of domestic hot water.
- Temporary shortage of domestic hot water can occur.

Usage pattern
Modest Daily demand up to 220 l -> typical 2-persons usage pattern.
Medium Daily demand up to 325 l -> typical 3 to 4 persons usage pattern.
High Daily demand up to 550 l -> 4 to 6 persons usage pattern.

(2) Heat-up time:

Definition:

Heat-up time The time required to reheat the domestic hot water tank to 55°C after tapping a certain volume of hot water at 40°C.
note: changing the field settings (see installation manual) can influence the heat-up time.

Tank	Setpoint temp.	Heat-up time for 150 L (bath) <min>	Heat-up time for 50 L (shower) <min>
150L	55	60	45
200L	55	60	40
300L	55	50	30

Conditions for testing: Ta = 7°CDB / 6°CWB, Troom = 20°C, Tstart = 10°C, outdoor unit type: ERHQ008

(3) Efficiency of domestic hot water production:

Both the heat-pump and the electric booster heater supply the energy to produce domestic hot water.

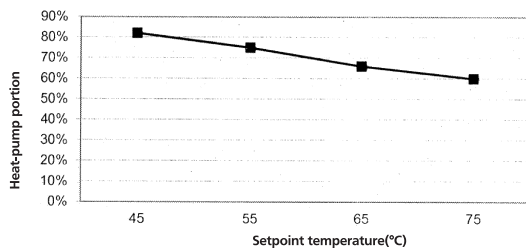
The higher the portion of energy supplied by the heat-pump, the more energy efficient the system is.

Lowering the setpoint temperature increases the portion of energy supplied by the heat-pump and thus the efficiency of the system.

Definition:

Heat-pump portion

Percentage of energy supplied by the heat pump in the total energy need for domestic hot water.



Conditions: Real life condition
Outdoor temperature 7°CDB / 6°CWB
Room temperature 20°CDB
Outdoor unit type ERHQ008
Tank type 200l
Field settings Default field settings (see installation manual).

(4) Heat losses of domestic hot water tank:

Tank EKHWS	Heat losses*
150l	1.55
200l	1.77
300l	2.19

* according to EN 12897