



## Danfoss Heat Pump DHP-L Opti

Minimum energy consumption thanks to optimized speed control.

## Danfoss Water Heater DWH

Advanced domestic hot water storage.



Danfoss DHP-L Opti uses new innovative technology to operate at the highest possible annual efficiency, meaning you can get 75% of your energy consumption for free – using renewable energy stored in the bedrock, the ground or the water.



The new Opti technology incorporates an intelligent control system that via speed controlled circulation pumps ensures that the performance is always adjusted to the prevailing requirements and conditions of the heating system. This makes the heat pump always work under the most ideal conditions available, guaranteeing maximum efficiency, second by second, hour by hour.



DHP-L Opti has a separate hot water tank, DWH (optional), ideal if you have a low ceiling. The tank incorporates our patented TWS\* technology, which produces hot water faster and at higher temperatures than with traditional technologies.



This heat pump operates at a low sound level and it can easily be adapted to produce cost effective cooling. You can also control and monitor it via the Internet.



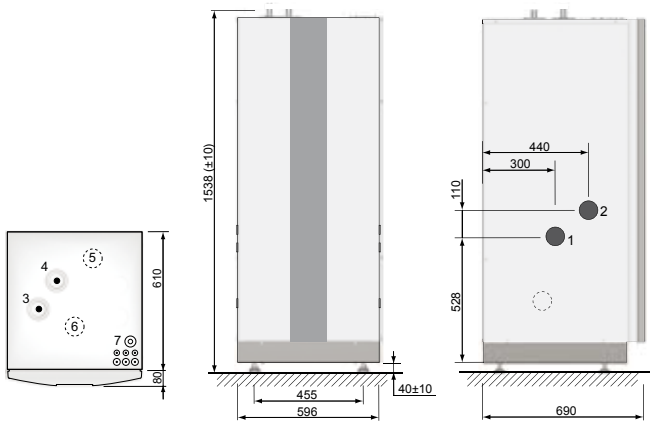
\* Tap Water Stratificator, our patented technology developed to stratify hot water in a tank to ensure that heat is used optimally.

# DANFOSS DHP-L OPTI

## Connection heat pump

The brine pipes can be connected on either the left or right-hand sides of the heat pump.

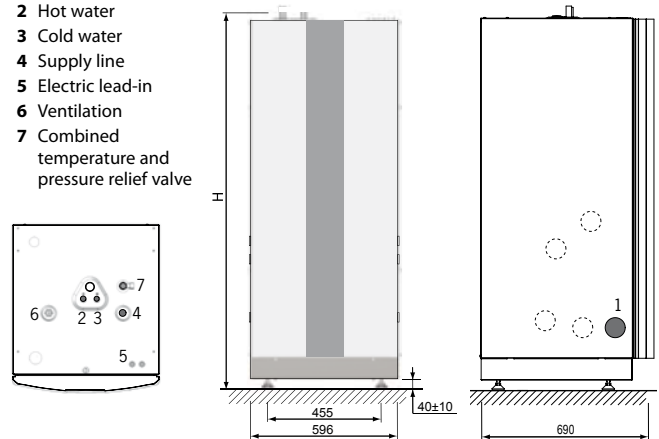
- 1 Brine in, 28 Cu
- 2 Brine out, 28 Cu
- 3 Heating system supply line, 22 Cu: 4-10 kW, 28 Cu: 12-16 kW
- 4 Heating system return line, 22 Cu: 4-10 kW, 28 Cu: 12-16 kW
- 5 Alternative for brine out
- 6 Alternative for brine in
- 7 Lead-in for supply, sensor and communication cables



# DANFOSS DWH

## Connection water heater

- 1 Return line
- 2 Hot water
- 3 Cold water
- 4 Supply line
- 5 Electric lead-in
- 6 Ventilation
- 7 Combined temperature and pressure relief valve



DWH			200	300
<b>Volume</b>	Sec/Prim	l	180/7.5	286/10
<b>Design pressure</b>	Sec/Prim	MPa	1.0/0.3	1.0/0.3
<b>Test pressure</b>	Sec/Prim	MPa	1.43/0.43	1.43/0.43
<b>Dry weight</b>		kg	141	147
<b>Filled weight</b>		kg	321	419
<b>Height</b>	H	mm	1538	1835

DHP-L Opti			6	8	10	12	16
<b>Refrigerant</b>	Type		R407C	R407C	R407C	R407C	R407C
	Amount	kg	1.20	1.30	1.45	1.55	2.00
	Test pressure	MPa	3.2	3.2	3.2	3.2	3.2
	Design pressure	MPa	3.1	3.1	3.1	3.1	3.1
<b>Compressor</b>	Type		Scroll	Scroll	Scroll	Scroll	Scroll
	Oil		POE	POE	POE	POE	POE
<b>Electrical data 3-N</b>	Main supply	Volt	400/50Hz	400/50Hz	400/50Hz	400/50Hz	400/50Hz
	Rated power, compressor	kW	2.0	2.3	3.6	4.4	5.6
	Auxiliary heater, max 3 steps	kW	3/6/9	3/6/9	3/6/9	3/6/9	3/6/9
	Start current	A	12	10	18	17	18
	Circuit breaker	A	10 <sup>3</sup> /16 <sup>4</sup> /20 <sup>5</sup>	10 <sup>3</sup> /16 <sup>4</sup> /20 <sup>5</sup>	16 <sup>3</sup> /16 <sup>4</sup> /20 <sup>5</sup>	16 <sup>3</sup> /20 <sup>4</sup> /25 <sup>5</sup>	20 <sup>3</sup> /20 <sup>4</sup> /25 <sup>5</sup>
	<b>Electrical data 1-N</b>	Main supply	Volt	230/50Hz	230/50Hz	230/50Hz	230/50Hz
	Rated power, compressor	kW	3.3	4.2	5.4	5.7	*
	Auxiliary heater, max 3 steps	kW	1.5/3/4.5	1.5/3/4.5	1.5/3/4.5	1.5/3/4.5	*
	Start current	A	58	76	97	108	*
	Circuit breaker	A	25 <sup>3</sup> /32 <sup>4</sup> /40 <sup>5</sup>	25 <sup>3</sup> /32 <sup>4</sup> /40 <sup>5</sup>	32 <sup>3</sup> /40 <sup>4</sup> /50 <sup>5</sup>	32 <sup>3</sup> /40 <sup>4</sup> /50 <sup>5</sup>	*
<b>Performance</b>	COP <sup>1</sup>		4.74	4.88	4.84	4.75	4.80
	COP <sup>2</sup>		4.04	4.34	4.24	4.20	3.99
	Heating capacity <sup>2</sup>	kW	5.3	7.5	9.4	11.0	16.4
<b>Nominal flow<sup>7</sup></b>	Cooling circuit	l/s	0.3	0.4	0.6	0.7	0.9
	Heating circuit	l/s	0.1	0.2	0.2	0.3	0.4
<b>External available pressure<sup>6</sup></b>	Cooling circuit	kPa	97	94	74	72	81
	Heating circuit	kPa	93	79	93	54	71
<b>Max/min temperature</b>	Cooling circuit	°C	20/-10	20/-10	20/-10	20/-10	20/-10
	Heating circuit	°C	55/20	55/20	55/20	55/20	55/20
<b>Pressure switches</b>	Low pressure	MPa	0.08	0.08	0.08	0.08	0.08
	Operating	MPa	2.65/2.85	2.65/2.85	2.65/2.85	2.65/2.85	2.65/2.85
	High pressure	MPa	3.10	3.10	3.10	3.10	3.10
<b>Anti freeze media</b>			Ethylene glycol/ Ethanol	Ethylene glycol/ Ethanol	Ethylene glycol/ Ethanol	Ethylene glycol/ Ethanol	Ethylene glycol/ Ethanol
<b>Weight</b>		kg	145	150	155	165	175

The measurements are performed on a limited number of heat pumps which can cause variations in the results. Tolerances in the measuring methods can also cause variations.

- 1) At B0/W35 Δ10K warm side (excluding circulation pumps).
- 2) At B0/W35 according to EN14511 (including circulation pumps).
- 3) Heat pump with 3 kW auxiliary heater (1-N 1.5 kW).
- 4) Heat pump with 6 kW auxiliary heater (1-N 3 kW).
- 5) Heat pump with 9 kW auxiliary heater (1-N 4.5 kW).

- 6) Pressure drop that must not be exceeded outside the heat pump without the nominal flow being reduced. For the cooling circuit these values require a pipe of Ø 40x2.4.
- 7) Nominal flow: heating circuit Δ10K, cooling circuit Δ3K.
- \* Not available in 230V 1-N version.