

DHP-L Opti ground source heat pump with DWH water heater

## Minimum energy consumption thanks to optimized speed control

The DHP-L Opti uses Opti technology that incorporates an intelligent control system using speed controlled circulation pumps to ensure the output is constantly adjusted to the prevailing requirements and conditions of both the heating system and collector. This means the heat pump will always operate under ideal conditions, therefore guaranteeing maximum efficiency, second by second, hour by hour.

The DHP-L Opti features a separate hot water tank, thus lowering the heat pumps height for smaller plant rooms, and when connected to the DWH, can produce large quantities of domestic hot water whilst using a minimum amount of energy. This is made possible by our patented technology TWS\* producing hot water faster than traditional alternatives can allow. You can also connect DHP-L Opti to your existing hot water tank.

This heat pump operates at a low sound level and it can easily be adapted to produce cost effective cooling. There is an option to control and monitor DHP-L Opti via the Internet.

The control system, although highly advanced is both intuitive and user friendly.



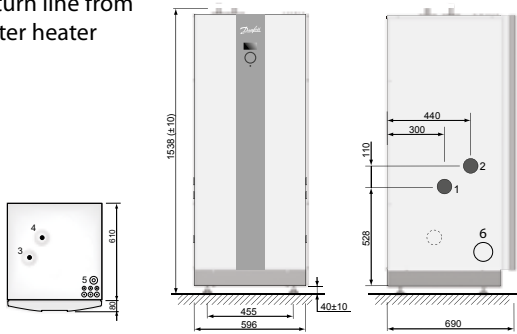
**15% more**  
hot water using TWS\*  
than conventional water  
heaters at the same price

Technical specification **Danfoss DHP-L Opti**

**Connection heat pump**

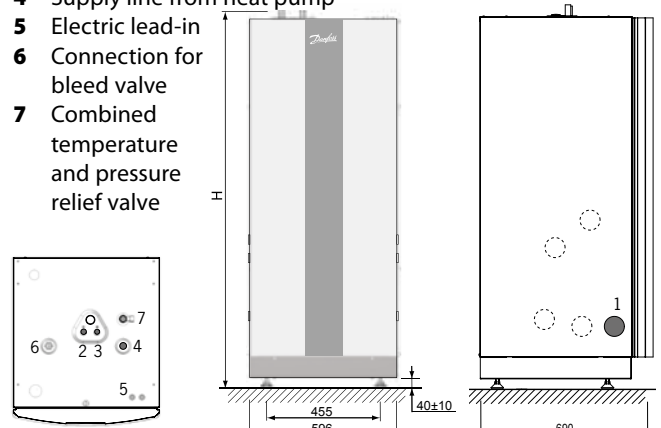
The brine lines can be connected on either the left or right-hand sides of the heat pump.

- 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 Lead-in for supply, sensor and communication cables
- 6 Return line from water heater



**Connection water heater**

- 1 Return line to heat pump
- 2 Hot water
- 3 Cold water
- 4 Supply line from heat pump
- 5 Electric lead-in
- 6 Connection for bleed valve
- 7 Combined temperature and pressure relief valve



DWH		200	300	
Volume	Sec/Prim	l	180/7.5	286/10
Design pressure	Sec/Prim	MPa	1.0/0.3	1.0/0.3
Test pressure	Sec/Prim	MPa	1.43/0.43	1.43/0.43
Weight empty		kg	141	147
Weight filled		kg	321	433
Height	H	mm	1538	1835

DHP-L Opti		4	6	8	10	12	16	
Refrigerant	Type	R407C	R407C	R407C	R407C	R407C	R407C	
	Amount	kg	0.75	1.20	1.35	1.45	1.55	2.00
Compressor	Type		Scroll	Scroll	Scroll	Scroll	Scroll	
	Main supply	Volt	400	400	400	400	400	
	Rated power, compressor	kW	2.3	3.0	3.2	4.2	5.0	7.2
	Auxiliary heater, 3 steps	kW	3/6/9	3/6/9	3/6/9	3/6/9	3/6/9	3/6/9
	Start current <sup>1</sup>	A	15	9	10	12	14	20
Electrical data 3-N~50Hz	Fuse	A	16 <sup>4</sup> /10 <sup>4</sup> /10 <sup>5</sup> /16 <sup>6</sup>	10 <sup>4</sup> /16 <sup>5</sup> /20 <sup>6</sup>	16 <sup>4</sup> /16 <sup>5</sup> /20 <sup>6</sup>	16 <sup>4</sup> /16 <sup>5</sup> /20 <sup>6</sup>	16 <sup>4</sup> /20 <sup>5</sup> /25 <sup>6</sup>	20 <sup>4</sup> /20 <sup>5</sup> /25 <sup>6</sup>
	Main supply	Volt	230	230	230	230	230	**
	Rated power, compressor	kW	2.3	3.2	4.1	4.5	5.5	**
	Auxiliary heater, 3 steps	kW	1.5/3/4.5	1.5/3/4.5	1.5/3/4.5	1.5/3/4.5	1.5/3/4.5	**
	Start current <sup>1</sup>	A	15	22	24	26	28	**
Electrical data 1-N~50Hz	Fuse	A	20 <sup>4</sup> /25 <sup>5</sup> /32 <sup>6</sup>	25 <sup>4</sup> /32 <sup>5</sup> /40 <sup>6</sup>	32 <sup>4</sup> /40 <sup>5</sup> /50 <sup>6</sup>	32 <sup>4</sup> /40 <sup>5</sup> /50 <sup>6</sup>	32 <sup>4</sup> /40 <sup>5</sup> /50 <sup>6</sup>	**
	COP <sup>2</sup>		4,57	4,74	4,88	4,84	4,75	4,80
	COP <sup>3</sup>		4,09	4,04	4,34	4,24	4,20	4,19
	Heating capacity <sup>3</sup>	kW	4,09	5,33	7,51	9,40	11,0	16,8
	Power input <sup>3</sup>	kW	1,0	1,3	1,7	2,2	2,6	4,0
Energy class - system <sup>10</sup>	Floor heating (35°C)/Radiator (55°C)		A++/A+	A++/A+	A++/A++	A++/A++	A+++/A++	A++/A++
	Domestic hot water		A	A	A	A	A	A
Energy class - product <sup>11</sup>	Floor heating (35°C)/Radiator (55°C)		A++/A+	A++/A+	A++/A++	A++/A++	A++/A++	A++/A++
	Domestic hot water		A	A	A	A	A	A
Max/min temperature	Cooling circuit	°C	20/-10	20/-10	20/-10	20/-10	20/-10	20/-10
	Heating circuit	°C	60/20	60/20	60/20	60/20	60/20	60/20
Anti freeze media <sup>8</sup>		Ethanol + water solution with freezing point -17 ±2 °C						
Dimensions LxWxH	mm	690x596x1538	690x596x1538	690x596x1538	690x596x1538	690x596x1538	690x596x1538	
Weight empty	kg	120	135	140	145	155	165	
Sound power level <sup>9</sup>	dB(A)	42	44	44	47	48	50	

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.  
 \*) Tap Water Stratification, our patented technology developed to ensure that the stored heat is always used optimally.  
 \*\*) Not available in this version.

1) According to IEC61000.  
 2) At BOW35 Δ10K warm side (excluding circulation pumps).  
 3) At BOW35 according to EN 14511 (including circulation pumps).  
 4) Heat pump with 3 kW auxiliary heater (1-N 1.5 kW).  
 5) Heat pump with 6 kW auxiliary heater (1-N 3 kW).  
 6) Heat pump with 9 kW auxiliary heater (1-N 4.5 kW).  
 7) Fuse protection phase L1 (size 4 is equipped with an 1-phase compressor).

8) Always check local rules and regulations before using antifreeze.  
 9) Sound power level measured according to EN ISO 3741 at BOW45 (EN 12102).  
 10) When the heat pump is part of an integrated system.  
 According to Eco-design Directive 811/2013  
 11) When the heat pump is the sole heat generator and the built-in controller is not included. According to Eco-design Directive 811/2013.

**A++** energy class when the heat pump is part of an integrated system  
**A++** energy class when the heat pump is the sole heat generator, Energy class according to Eco-design Directive 811/2013

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