







## Danfoss Heat Pump DHP-AL Opti


Air/water heat pump with optimised speed control to increase savings.



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Danfoss DHP-AL Opti is an air/water heat pump that uses new innovative technology to operate at the highest possible annual efficiency, meaning you can save more on fuel bills and CO<sub>2</sub> emissions.
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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.
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TWS
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DHP-AL Opti has a separate hot water tank, 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 levels and it can be controlled and monitored via the Internet.
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6-12 kw
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\* Tap Water Stratificator, our patented technology developed to stratify hot water in a tank to ensure that heat is used optimally.



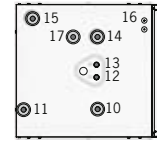
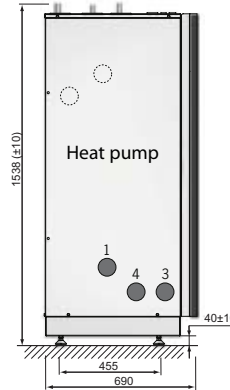
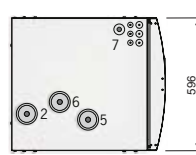
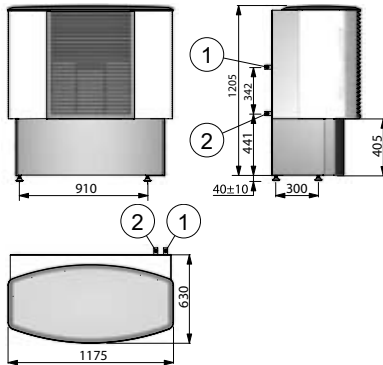
Kiwa applies to single phase models only

# DANFOSS DHP-AL OPTI

## Connection

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



## Heat pump

- 1 Brine in, 28 Cu
- 2 Brine out, during normal operation, 28 Cu
- 3 Brine out, during defrosting to hwh pos 8, 28 Cu
- 4 Return pipe from water heater pos 9, 28 Cu
- 5 Heating system supply line, 22 Cu: 6-10 kW, 28 Cu: 12 kW
- 6 Heating system return line, 22 Cu: 6-10 kW, 28 Cu: 12 kW
- 7 Lead-in power and sensor lead

## Water tank

- 8 Connection for brine out when defrosting from pos 3
- 9 Water tank, return pipe to pos 4
- 10 Bleed valve, at stainless steel water heater
- 11 Brine out during defrosting, 28 Cu
- 12 Domestic hot water, 22 Brass
- 13 Cold water, 22 Brass
- 14 Supply to water tank coil
- 15 Brine, expansion outlet when outdoor unit is positioned at high level
- 16 Lead-in sensor lead
- 17 Temperature and pressure valve

DHP-AL Opti			6	8	10	12
<b>Refrigerant</b>	Type		R404A	R404A	R404A	R404A
	Amount	kg	0.95	1.45	1.50	1.60
<b>Compressor</b>	Type		Scroll	Scroll	Scroll	Scroll
<b>Electrical data 3-N ~50Hz</b>	Main supply	Volt	400	400	400	400
	Rated power compressor	kW	2.0	2.3	3.6	4.4
	Rated power circulation pumps/fan	W	0.4	0.4	0.5	0.6
	Auxiliary heater, 5 steps	kW	3/6/9/12/15	3/6/9/12/15	3/6/9/12/15	3/6/9/12/15
	Start current per phase	A	12	10	18	17
	Circuit breaker	A	10 <sup>3</sup> /16 <sup>3</sup> /20 <sup>5</sup> /20 <sup>6</sup> /25 <sup>7</sup> /25 <sup>9</sup> /30 <sup>9</sup>	16 <sup>3</sup> /16 <sup>3</sup> /20 <sup>5</sup> /20 <sup>6</sup> /25 <sup>7</sup> /25 <sup>9</sup> /30 <sup>9</sup>	16 <sup>3</sup> /16 <sup>3</sup> /20 <sup>5</sup> /20 <sup>6</sup> /25 <sup>7</sup> /30 <sup>9</sup> /35 <sup>9</sup>	16 <sup>3</sup> /20 <sup>5</sup> /25 <sup>5</sup> /25 <sup>6</sup> /25 <sup>7</sup> /30 <sup>9</sup> /35 <sup>9</sup>
<b>Electrical data 1-N ~50Hz</b>	Main supply	Volt	230	230	230	230
	Rated power compressor	kW	3.3	4.2	5.4	5.7
	Rated power circulation pumps/fan	W	0.4	0.4	0.5	0.6
	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
	Start current - soft start	A	11	21	26	28
	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>5</sup> /50 <sup>5</sup>	32 <sup>3</sup> /40 <sup>5</sup> /50 <sup>5</sup>
<b>Performance</b>	COP <sup>1</sup>		3.88	4.06	4.21	4.06
	COP <sup>2</sup>		3.26	3.45	3.29	3.35
	Heating capacity <sup>2</sup>	kW	5.90	7.96	9.85	11.3
	Power input <sup>2</sup>	kW	1.8	2.3	3.0	3.4
<b>Lowest outdoor temperature allowed for compressor start</b>		°C	-20	-20	-20	-20
<b>Max/min temperature</b>	Cooling circuit	°C	20/-25	20/-25	20/-25	20/-25
	Heating circuit	°C	55/20	55/20	55/20	55/20
<b>Water volume</b>	Water heater	l	180	180	180	180
<b>Anti freeze media<sup>10</sup></b>			Ethylene glycol + water solution to -32°C +/- 1°C			
<b>Indoor unit</b>	Dimensions LxWxH	mm	690x596x1538	690x596x1538	690x596x1538	690x596x1538
	Weight	kg	154	154	154	162
	Sound power level <sup>11</sup>	dB(A)	42.5	47.7	45.5	48.1
<b>Water heater unit</b>	Dimensions LxWxH	mm	690x596x1538	690x596x1538	690x596x1538	690x596x1538
	Weight empty	kg	172	172	172	172
	Weight filled	kg	352	352	352	352
<b>Outdoor unit</b>	Dimensions LxWxH	mm	630x1175x1245	630x1175x1245	630x1175x1245	630x1175x1245
	Weight	kg	94	94	94	94
	Sound power level, low/high <sup>12</sup>	dB(A)	53/63	53/63	54/67	54/67
<b>Max pipe/cable length between indoor &amp; outdoor units</b>		m	60 (30 + 30)	60 (30 + 30)	60 (30 + 30)	60 (30 + 30)

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 A7W35 Δ10 warm side (excluding circulation pumps and outdoor unit).
- 2) At A7W35 according to EN 14511 (including circulation pumps and outdoor unit).
- 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) 12 kW auxiliary heater (compressor off).

- 7) 15 kW auxiliary heater (compressor off).
- 8) Heat pump with 12 kW auxiliary heater.
- 9) Heat pump with 15 kW auxiliary heater.
- 10) Propylene glycol or ethanol may not be used.
- 11) Sound power level measured according to EN ISO 3741 at A7W45 (EN 12102).
- 12) Sound power level measured according to EN ISO 3741.

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[www.uk.heatpumps.danfoss.com](http://www.uk.heatpumps.danfoss.com)

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