

EcoHeat 410 Heat Pump


Main features	
Application	space heating and hot water heating
Description	the heat pump is equipped with a mixing valve (with an actuator) to ensure the supply of heating water at the required temperature, a circulating pump for connection to a well or ground loop, storage tank with integrated copper heat exchanger for hot water supply and control system for individual setting and function monitoring; a room temperature sensor is included in the standard delivery
Working fluid	R407C (refrigerant), antifreeze fluid (brine circuit), water (heating c.)
Code	13443

Technical data	
Output ¹	9,97 kW
Power input ¹	2,17 kW
COP ¹	4,59
Max. starting current	19,8 A
Max. compressor operating current	6,8 A
Power supply	3/N/PE ~ 400V 50Hz
IP rating	IPX1
Compressor	Scroll
Refrigerant	R407C
Refrigerant quantity	1,9 kg
CO2 equivalent ²	3,37 tun
Refrigerant max. working pressure	31 bar
Brine system min./max. pressure	0,2 / 3,0 bar
Brine system min./max. temperature	-5 / 20 °C
Antifreeze fluid volume in HP	2,9 l
Brine system min. flow through HP ($\Delta t = 5$ K)	1368 l/h
Brine system max. flow through HP ($\Delta t = 3$ K)	2304 l/h
Brine circuit connection	2 x Cu28
Max. heating water outlet temperature	65 °C
Max. storage tank temperature	110 °C
Max. storage tank working pressure	2,5 bar
Storage tank volume	223 l
Nominal heating water flow rate through HP	860 l/h
Min. heating water flow rate through heating circuit	unlimited
DHW heat exchanger water volume	5,7 l
DHW heat exchanger max. working pressure	10 bar
DHW heat exchanger max. working temperature	110 °C
DHW heat exchanger connections	2 x Cu22
Overall dimensions	1904 x 595 x 672 mm
Min. ceiling height	1930 mm
Weight	272 kg

¹) at B0/W35 temperatures ²) is not covered by the annual check for leaking refrigerant according to EU no. 517/2014

Bivalent source	
Max. output of backup source with circuit breaker size ³	2,1 kW (16 A) 7,2 kW (20 A) 9,0 kW (25 A)

³) the backup source output can be adjusted between 0 and 9.0 kW in 0.3 kW steps

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Parameters for distribution tariff change

Nominal power input (required input)	3,22 kW
Heat output ⁴	9,97 kW
Steady current ⁴	3,5 A
Starting current	19,8 A
Nominal voltage / number of phases	400V 3f

4) at B0/W35 temperatures

Sound data

Sound power level LWA by EN 12 102	48,5 dB
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Energy efficiency data

(for average climatic conditions, others see the Product Fiche)

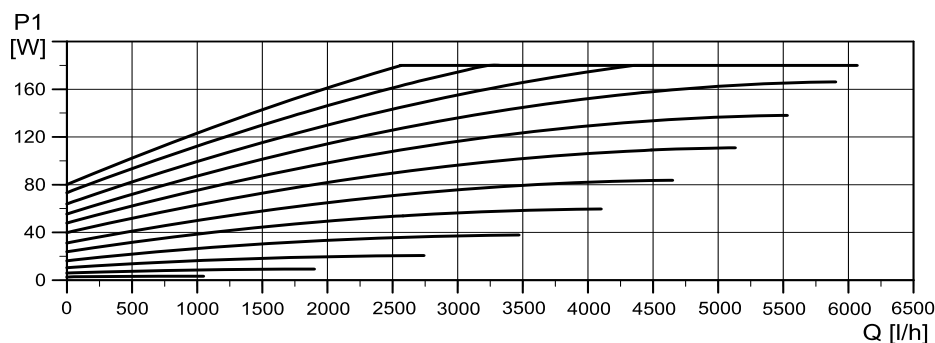
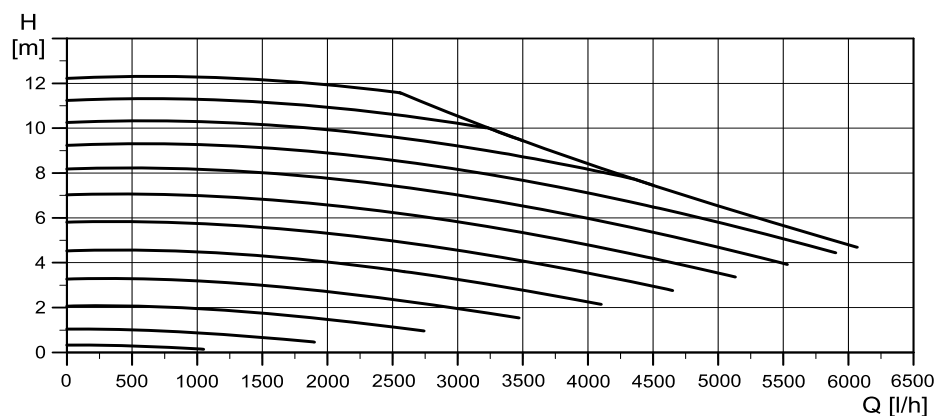
Energy Efficiency Class for space heating (W55)	A++
Energy Efficiency Class for hot water heating (W55)	A
Declared Load Profile	L

Output parameters ⁵

		[°C]			
		-5/25	-5/35	-5/45	-5/55
Output	[kW]	-	-	8,33	-
Power input	[kW]	-	-	2,52	-
COP	[-]	-	-	3,31	-
		0/25	0/35	0/45	0/55
Output	[kW]	10,40	9,97	9,55	9,28
Power input	[kW]	1,87	2,17	2,60	3,11
COP	[-]	5,56	4,59	3,67	2,98
		5/25	5/35	5/45	5/55
Output	[kW]	-	11,42	10,99	10,58
Power input	[kW]	-	2,20	2,64	3,22
COP	[-]	-	5,19	4,16	3,29

5) values measured according to EN 14 511 at the manufacturer's test lab

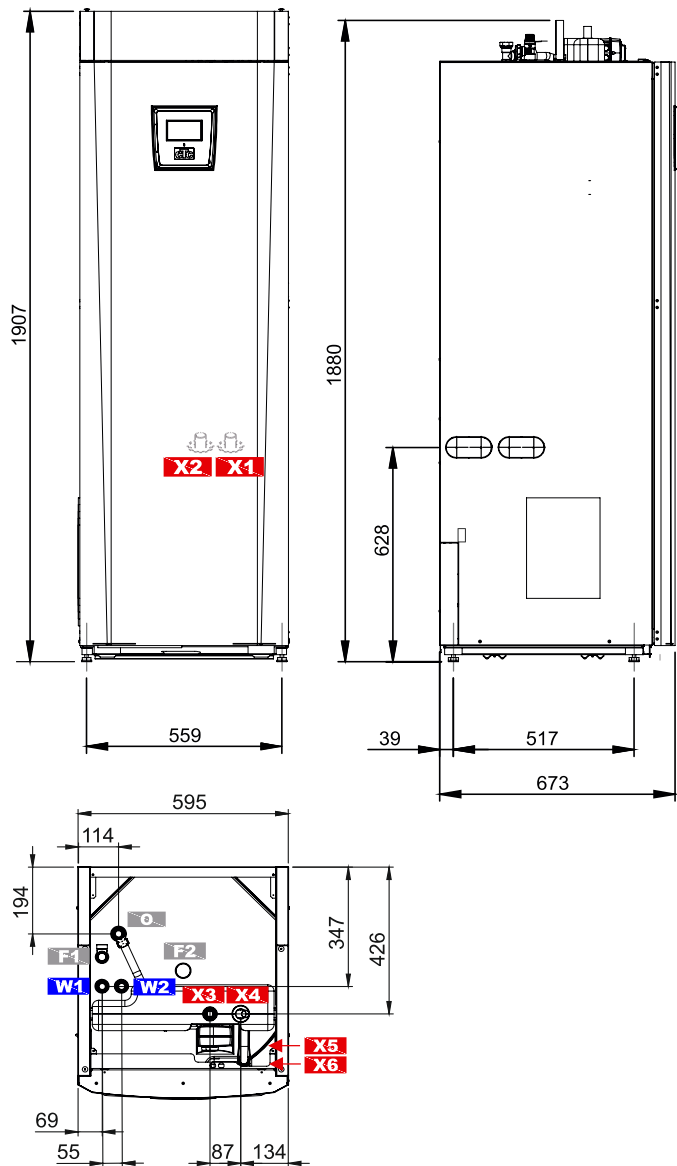
Performance curves for brine circuit pump



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Dimensions

pos.	Description	Connection
W1	Cold water	Cu 22x1
W2	Hot water	Cu 22x1
X1	Supply from ground circuit	Cu 28x1
X2	Return to ground circuit	Cu 28x1
X3	Flow to heating systém	Cu 22x1
X4	Return from heating systems	Cu 22x1
X5	Passage for external heat source	-
X6	Passage for external heat source	-
F1	Safety valve spillway	G 3/4" F
F2	Hoisting eye	G 3/4" F
O	Air vent	Cu 22x1



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v1.1_01/2021

The energy efficiency of the package of products provided for in fiche may not correspond to its actual energy efficiency once installed in a building, as the efficiency is influenced by further factors such as heat loss in the distribution system and the dimensioning of the products in relation to building size and characteristics.

Supplier: *REGULUS spol. s.r.o.*
Model: *EcoHeat 410*

I	The value of the seasonal space heating energy efficiency of the preferential space heater	125	%
II	The factor for weighting the heat output of preferential and supplementary heaters of a package	-	-
III	The value of the mathematical expression $294/(11 \cdot P_{\text{rated}})$	2,43	-
IV	The value of the mathematical expression $115/(11 \cdot P_{\text{rated}})$	0,95	-
V	The value of the difference between the seasonal space heating energy efficiencies under average and colder climate conditions	2,00	%
VI	The value of the difference between the seasonal space heating energy efficiencies under warmer and average climate conditions	1,00	%

Seasonal space heating energy efficiency of heat pump $I =$ **1** **125** %

Temperature control (from fiche of temperature control)

Class I = 1,0%	Class II = 2,0%	Class III = 1,5%	+ 2 3,5 %
Class IV = 2,0%	Class V = 3,0%	Class VI = 4,0%	
Class VII = 3,5%	Class VIII = 5,0%		

Supplementary boiler (from fiche of boiler)

Seasonal space heating energy efficiency (in %)

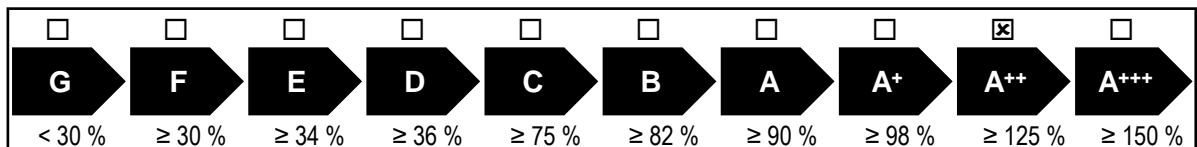
$$(\square - I) \cdot II = - \mathbf{3} \mathbf{-} \%$$
Solar contribution (from fiche of solar device)

Collector size (in m²) Collector efficiency (in %)

$$(III \square + IV \square) \cdot 0,45 \cdot (\square / 100) \cdot \square = + \mathbf{4} \mathbf{-} \%$$

Tank volume (in m³) Tank rating: A⁺ = 0,95 A = 0,91 B = 0,86 C = 0,83 D-G = 0,81

Seasonal space heating energy efficiency of package under average climate **5** **129** %

Seasonal space heating energy efficiency class of package under average climate

Seasonal space heating energy efficiency under colder and warmer climate conditions
Colder: **5** **123** - V = **127** %

Warmer: **5** **123** + VI = **130** %

The energy efficiency of the package of products provided for in fiche may not correspond to its actual energy efficiency once installed in a building, as the efficiency is influenced by further factors such as heat loss in the distribution system and the dimensioning of the products in relation to building size and characteristics.

I	Water heating energy efficiency of combination heater	87	%
II	The value of the mathematical expression $(220 \cdot Q_{ref}) / Q_{nonsol}$	-	-
III	The value of the mathematical expression $(2,5 \cdot Q_{aux}) / (220 \cdot Q_{ref})$	-	-

Water heating energy efficiency of combination heater $I =$ **1** **87** %

Declared load profile **L**

Solar contribution (from fiche of solar device)

Auxiliary electricity

$(1,1 \cdot I - 10\%) \cdot II - III - I =$ **2** **-** %

Water heating energy efficiency of package under average climate **3** **87** %

Water heating energy efficiency class of package under average climate

		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		G	F	E	D	C	B	A	A+	A++	A+++
<input type="checkbox"/>	M	< 27 %	≥ 27 %	≥ 30 %	≥ 33 %	≥ 36 %	≥ 39 %	≥ 65 %	≥ 100 %	≥ 130 %	≥ 163 %
<input checked="" type="checkbox"/>	L	< 27 %	≥ 27 %	≥ 30 %	≥ 34 %	≥ 37 %	≥ 50 %	≥ 75 %	≥ 115 %	≥ 150 %	≥ 188 %
<input type="checkbox"/>	XL	< 27 %	≥ 27 %	≥ 30 %	≥ 35 %	≥ 38 %	≥ 55 %	≥ 80 %	≥ 123 %	≥ 160 %	≥ 200 %
<input type="checkbox"/>	XXL	< 28 %	≥ 28 %	≥ 32 %	≥ 36 %	≥ 40 %	≥ 60 %	≥ 85 %	≥ 131 %	≥ 170 %	≥ 213 %

Water heating energy efficiency of package under colder and warmer climate conditions

Colder: **3** **78** - 0,2 · **2** **-** = **87** %

Warmer: **3** **78** + 0,4 · **2** **-** = **87** %