

Main features	
Application	space heating and hot water heating
Description	tepelné čerpadlo je vybaveno směšovací ventil s pohonem pro zajištění dodávky otopné vody o požadované teplotě, oběhovým čerpadlem pro připojení na okruh vrtu či zemní smyčky, akumulací nádrží s integrovaným měděným výměníkem pro dodávku teplé vody a řídicím systémem pro individuální nastavení a monitoring funkce; ve standardní dodávce je již obsaženo čidlo pokojové teploty
Working fluid	R407C (refrigerant), antifreeze fluid (brine circuit), water (heating c.)
Code	13 444



Electric data	
Power supply	3/N/PE ~ 400/230V 50Hz
Nominal output (35/55)	14 / 13 kW
Nominal power input	14,1 kW
Max. starting current	23,5 A
Max. compressor operating current	8,2 A
IP rating	IPX1
Backup source	
Max. output of backup source with circuit breaker size *	2,1 kW (16 A) 6,9 kW (20 A) 9,0 kW (25 A)
* the backup source output can be adjusted between 0 and 9.0 kW in 0.3 kW steps	
Heating system	
Nominal system flow	0,28 l/s
Min. system flow	unlimited
Max. heat pump flow temp.	65 °C
Thermal Store volume	223 l
Max. working pressure in Thermal Store	2,5 bar
Max. working temper. in Thermal Store	110 °C
Hot water circuit	
Water volume in DHW heat exchanger	5,7 l
Max. working pressure in heat exchanger	10 bar
Max. temperature in heat exchanger	110 °C
Connections	2 x Cu22
Brine circuit	
Fluid volume	3,4 l
Nominal circuit flow ( $\Delta t = 3$ K)	0,73 l/s
Min. circuit flow ( $\Delta t = 5$ K)	0,44 l/s
Working temperature in circuit	-5 to 20 °C
Working pressure in circuit	0,2 to 3,0 bar
Connections	2 x Cu28
Other data	
Weight	279 kg
Sound level by EN 12 102	48 dB(A)
Refrigerant quantity	2,3 kg
CO2 equivalent	4,08 tun
Refrigerant	R407C
Compressor type	Scroll
High pressure switch	31 bar
Height x width x depth	1904 x 595 x 672 mm
Min. ceiling height	1925 mm

## EcoHeat 412 Heat Pump

v1.3\_12/2017

### Accessories



Pokojová bezdrátová jednotka

### Energy Efficiency data \*\*

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

\*\* Energy Efficiency values are valid for average climatic conditions

### Accessories

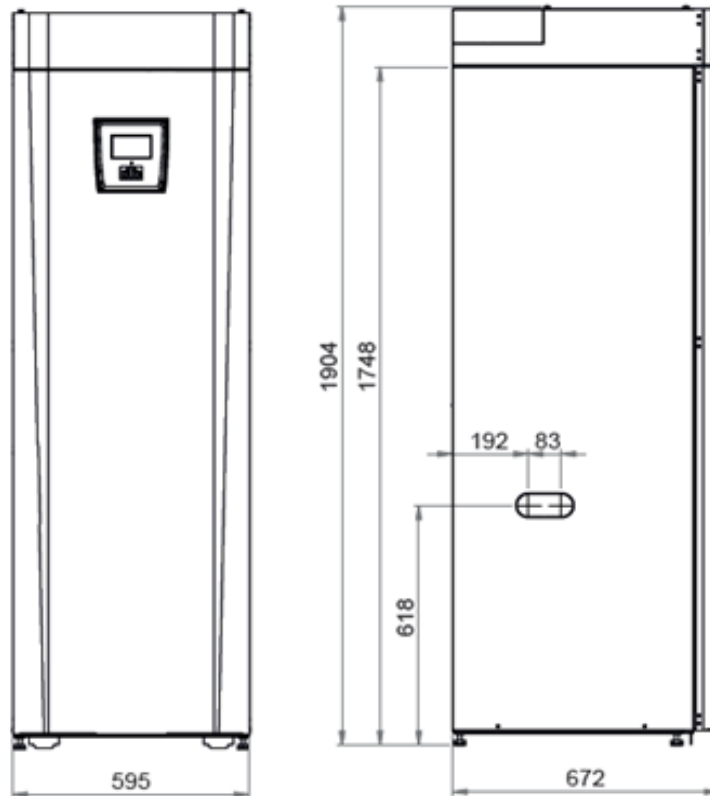
Pokojová bezdrátová jednotka	code 13 944
Internetový modul	code 15 085

### Output parameters \*\*\*

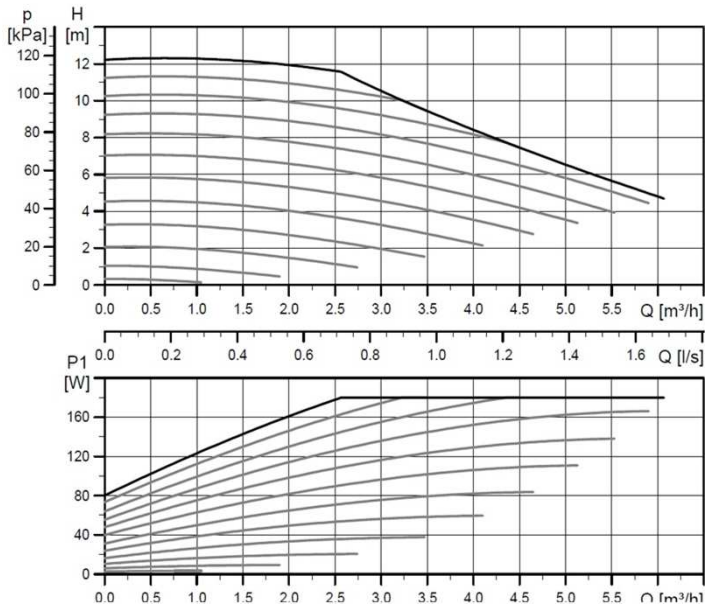
[°C]		-5/25	-5/35	-5/45	-5/55
Output	[kW]	-	-	9,88	-
Power input	[kW]	-	-	2,99	-
COP	[-]	-	-	3,30	-
[°C]		0/25	0/35	0/45	0/55
Output	[kW]	-	11,75	11,24	10,97
Power input	[kW]	-	2,55	3,07	3,71
COP	[-]	-	4,60	3,66	2,96
[°C]		5/25	5/35	5/45	5/55
Output	[kW]	-	13,53	12,95	12,57
Power input	[kW]	-	2,65	3,15	3,75
COP	[-]	-	5,11	4,11	3,35

\*\*\* values measured according to EN 14 511 at the manufacturer's test lab and confirmed by EHPA Quality label

### Dimensions



### Performance curves for brine circuit pump



#### UPMXL GEO 25-125 180 PWM

Min.  $P_1$  3,0 W  
 Max.  $P_1$  180,0 W  
 EEI \*  $\leq 0,23$

\* Energy Efficiency Index

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 406**

I	The value of the seasonal space heating energy efficiency of the preferential space heater	123	%
II	The factor for weighting the heat output of preferential and supplementary heaters of a package	-	-
III	The value of the mathematical expression $294/(11 \cdot P_{rated})$	2,06	-
IV	The value of the mathematical expression $115/(11 \cdot P_{rated})$	0,80	-
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  $I = \mathbf{123} \%$

Temperature control (from fiche of temperature control)

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

+  $\mathbf{3,5} \%$

Supplementary boiler (from fiche of boiler)

Seasonal space heating energy efficiency (in %)

$(\mathbf{-} - I) \cdot II = \mathbf{-3} \%$

Solar contribution (from fiche of solar device)

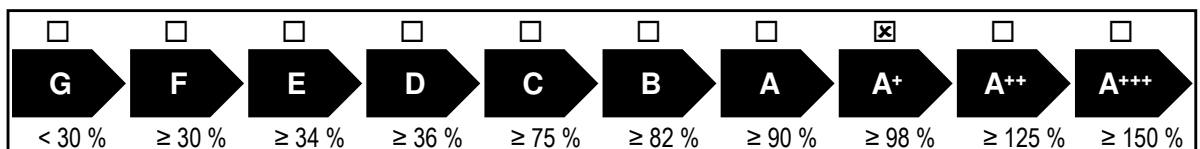
Collector size (in m<sup>2</sup>)      Collector efficiency (in %)

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

Tank volume (in m<sup>3</sup>)      Tank rating: A<sup>+</sup> = 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  $\mathbf{127} \%$

Seasonal space heating energy efficiency class of package under average climate



Seasonal space heating energy efficiency under colder and warmer climate conditions

Colder:  $\mathbf{123} - V = \mathbf{125} \%$   
Warmer:  $\mathbf{123} + VI = \mathbf{128} \%$

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	<b>86</b>	%
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** **86** %

Declared load profile L

Solar contribution (from fiche of solar device)

$$(1,1 \cdot I - 10\%) \cdot II - \text{Auxiliary electricity} - I = + \text{2} \text{ - } \%$$

Water heating energy efficiency of package under average climate **3** **86** %

Water heating energy efficiency class of package under average climate

		<input type="checkbox"/> G	<input type="checkbox"/> F	<input type="checkbox"/> E	<input type="checkbox"/> D	<input type="checkbox"/> C	<input type="checkbox"/> B	<input checked="" type="checkbox"/> A	<input type="checkbox"/> A+	<input type="checkbox"/> A++	<input type="checkbox"/> 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** **-** = **86** %

Warmer: **3** **78** + 0,4 · **2** **-** = **86** %