ecoFOREST

ecoGEO+ HP

R454B 170kW
Brine to Water Heat Pumps
with Inverter Technology

R454B
ecoFOREST

ecoGEO+ HP R454B

Models

ecoGEO+ 170 R454B

T-Phase 400 Vac

Options

ecoGEO+ HP1	ecoGEO+ HP3
DHW *	DHW *
Heating	Heating
Pasive cooling **	Pool
Pool	Pasive cooling **
	Active cooling

** DHW production with an external tank*
*** External passive cooling management*

Services

- DHW 65ºC
- Heating 60ºC
- Cooling 5ºC
- Pool 55ºC

Compatible production systems

- Heat./Cool. floor
- Fancoils
- Radiators

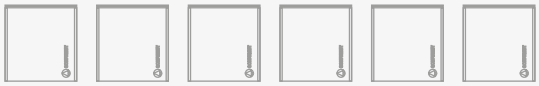
Management of shunt groups

- x1
- x1
- x1
- x4

Performance

- Simultaneous production
- Hybrdi source
- HTR Technology
- Lifespan

Cascada



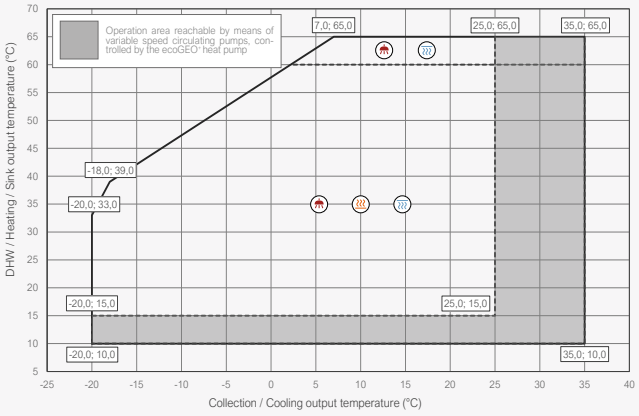
ecoSMART Supervisor

Characteristics

- Modulating thermal output control across a wide range (25%–100%) and modulating flow control in both source and production circuits (20%–100%).
- R454B refrigerant (GWP 466).
- Inverter technology.
- Single scroll compressor unit.
- High Temperature Recovery (HTR) system for DHW production up to 70 °C without auxiliary support and simultaneous production of DHW and heating/cooling (ecoGEO+ HP 20–85 models).
- Integrated management of up to five different flow temperatures, two buffer tanks (heating and cooling), one DHW tank, one swimming pool, and time scheduling of DHW recirculation.
- Integrated control of external auxiliary backup systems—on/off or modulating (electric heaters, boilers, etc.).
- Cascade control of up to six heat pumps via ecoSMART Supervisor.
- Multi-source ground loop management via ecoSMART e-source.
- Integrated management of simultaneous heating/cooling production and emission systems, depending on the system layout.
- External passive cooling management.
- Active cooling via cycle inversion integrated in HP3 models.
- Available in three-phase version.
- Integrated photovoltaic hybridisation.
- Integrated energy meters for monitoring electrical consumption, thermal output (heating/cooling), and instantaneous as well as seasonal efficiency—monthly and annual.

Operational chart

ecoGEO⁺ HP 170 R454B



ecoGEO+ HP 170 R454B

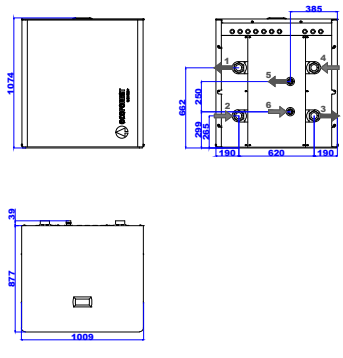
Brine to water heat pumps with Inverter technology and R454B refrigerant

SPECIFICATIONS ecoGEO+ HP R454B			ecoGEO+ 170 R454B	
			HP1	HP3
APPLICATION	Place of installation	-	Indoor	
	Collection system	-	Ground source / Open loop	
	DHW, Heating and Pool heating	-	▪	▪
	External passive cooling control	-	▪	▪
	Integrated active cooling	-	-	▪
PERFORMANCE	Compressor modulation range	%	25 - 100	
	(2) Heating power output / COP B0W35	kW / -	21.1 - 80.0 / 4.6	
	(2) Heating power output / COP B0W55	kW / -	27.7 - 76.8 / 2.9	
	(2) Cooling power output / EER B30W7	kW / -	-	21.4 - 73.7 / 4.5
	(5) Max. DHW temperature without / with support	°C	60 / 80	
	(6) Maximum noise power level (LWA)	dB (A)	72	
	Energy label / ηs / SCOP W35 average clim. with control	-	A+++ / 197% / 5.13	
	Energy label / ηs / SCOP W55 average clim. with control	-	A++ / 142% / 3.75	
OPERATION LIMITS	Distribution / Set heating outlet temperature range	°C	10 - 60 / 20 - 60	
	Distribution / Set cooling outlet temperature range	°C	-	5 - 30 / 7 - 30
	Collection temperature range in heating / cooling mode	°C	-20 - 35 / 10 - 60	
	Minimum / Maximum refrigerant circuit pressure	bar	2.0 / 45.0	
	Collection / Production circuit pressure range	bar	0.7 - 10.0 / 0.7 - 10.0	
WORKING FLUIDS	R454B refrigerant load (GWP: 466)	kg	8.20	
	Compressor oil type / load	kg	POE 160SZ / 6.7 - 7.7	
	Primary circ. flow rate (Pmax, B0W35) ΔT 3°C / ΔT 5°C	m^3/h	18.7 / 11.2	
	Secondary circ. flow rate (Pmax, B0W35) ΔT 5°C / ΔT 7°C	m^3/h	13.9 / 9.9	
CONTROL ELECTRICAL DATA	(8) 1/N/PE 230 V / 50-60 Hz	-	▪	
	(9) Recommended external protection	-	C1A	
	Transformer primary circuit fuse	A	0.63	
	Transformer secondary circuit fuse	A	4.0	
HEAT PUMP ELECTRICAL DATA: THREE-PHASE VERSION	(8) 3/N/PE 400 V / 50-60 Hz	-	▪	
	(9) Recommended external protection	-	C63A	
	(2) Maximum consumption B0W35	kW / A	20.3 / 31.8	
	(2) Maximum consumption B0W55	kW / A	29.6 / 45.1	
	(2) Maximum consumption	kW / A	33.7 / 52.9	
	(7) Minimum / Maximum starting current	A	10.8 / 16.7	
	Correction of cos Ø	-	0.96 / 1	
DIMENSIONS & WEIGHT	Height x width x depth	mm	1074x1009x916	
	Empty weight (without packaging)	kg	450	465

1. Air-to-water by means of a brine-to water heat pump combined with a hydraulic outdoor air unit.
2. In compliance with EN 14511, including circulation pumps, fan and compressor driver consumptions.
3. Production flow rate according to EN 14511.
4. Considering a heat slope from 20 to 50 °C in absence of consumption.
5. Considering support provided by an emergency electrical heater or HTR. Max. DHW temp. with HTR can be limited by the compressor discharge temp.
6. In compliance with EN 12102.
7. Starting current depends on the working conditions of the hydraulic circuits.
8. The admissible voltage range for proper operation of the heat pump is ±10%.
9. Maximum consumption can vary significantly according to working conditions, or if the compressor´s operation range is restricted. Consult the technical service manual for more information.
10. Certification in process.

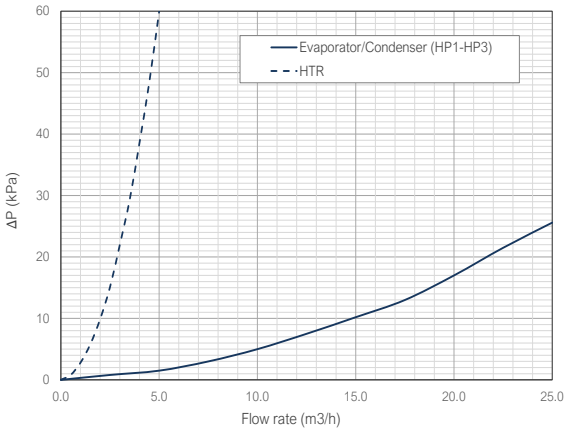
Dimensions and hydraulic connections

ecoGEO+ HP R454B

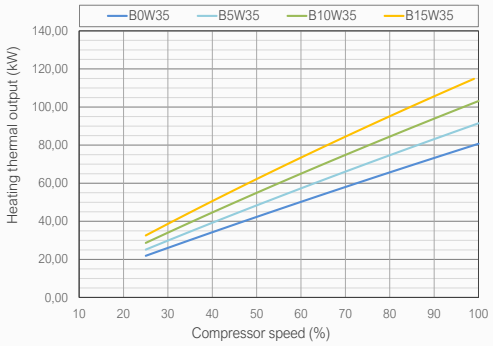


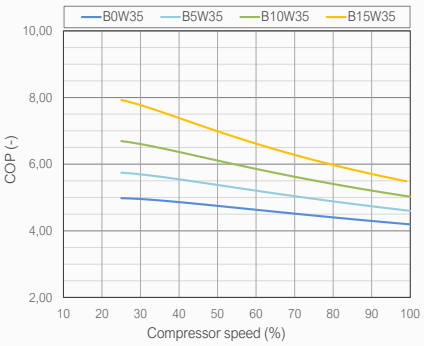
1. Secondary outlet **2 ½" M**
2. Secondary inlet **2 ½" M**
3. Primary outlet **2 ½" M**
4. Primary inlet **2 ½" M**
5. HTR outlet **1 ¼" M**
6. HTR inlet **1 ¼" M**

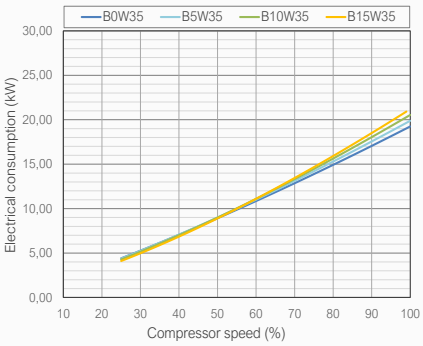
Pressure drop



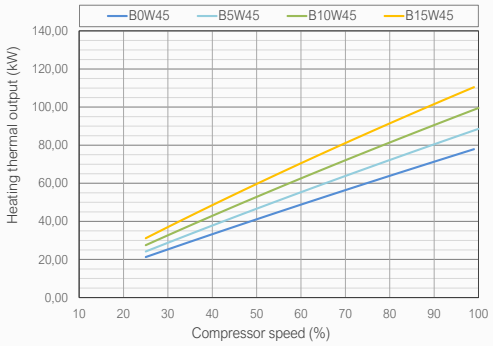
Heating W35

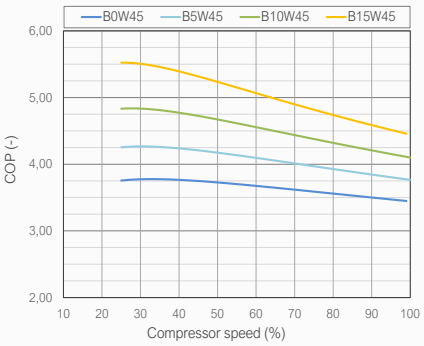


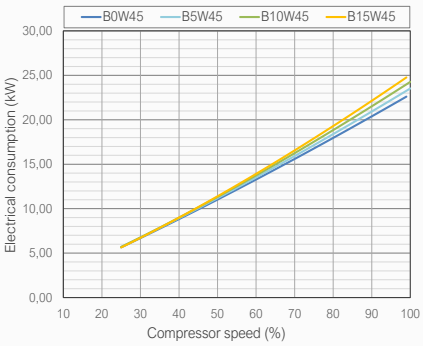




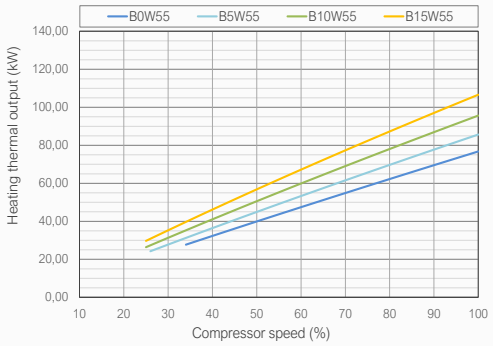
Heating W45

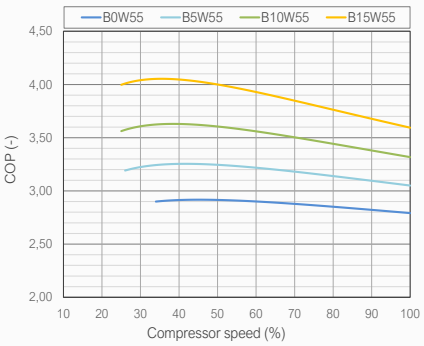


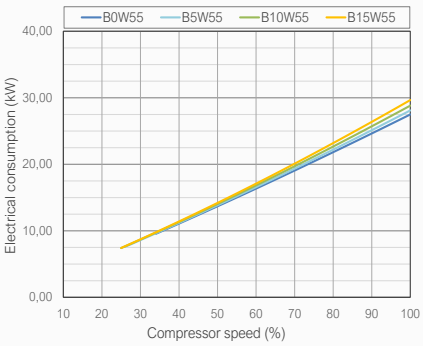




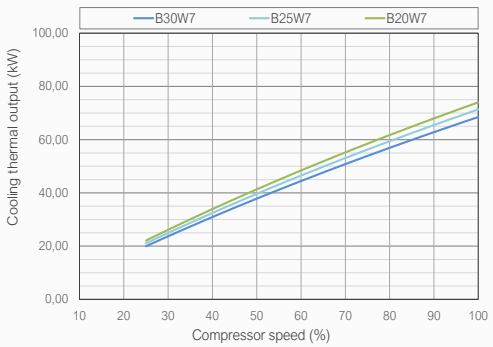
Heating W55

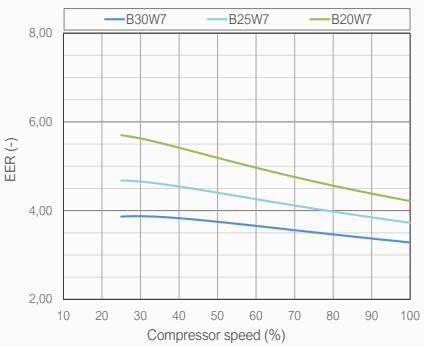


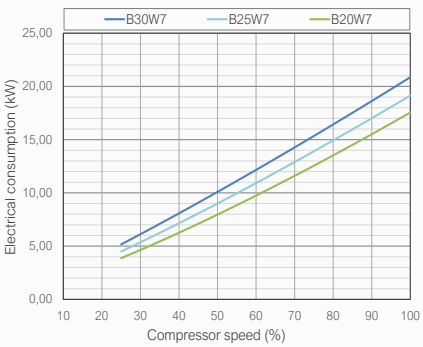




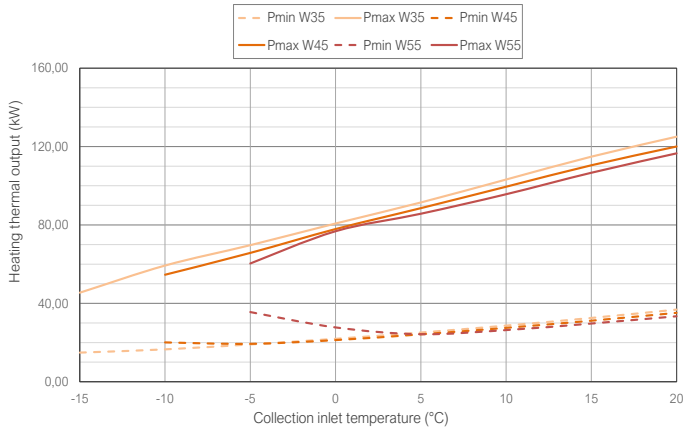
Cooling W7

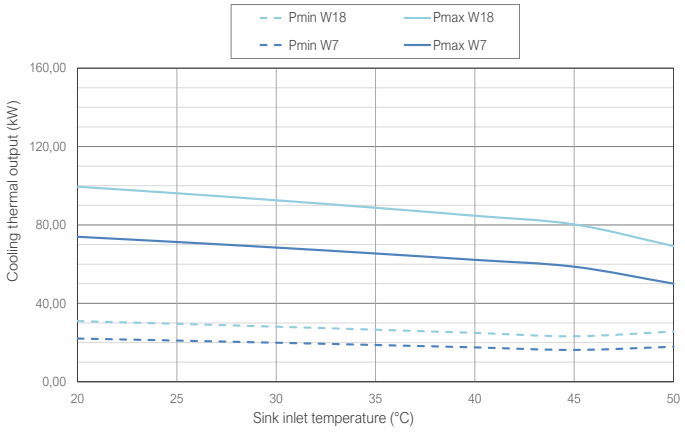






Thermal power - Brine system temperature





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May 2026

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energylabuk.com | sales@energylabuk.com | 01271 850 204
Registered Address: Millennium House, Brannam Crescent, Roundswell Business Park, Barnstaple, Devon, EX31 3TD, United Kingdom | Company Number: 08586990