

Daikin Altherma hybrid heat pump



Why choose a Daikin Altherma hybrid heat pump

The Daikin Altherma hybrid heat pump is the ideal solution to replace your old gas boiler.

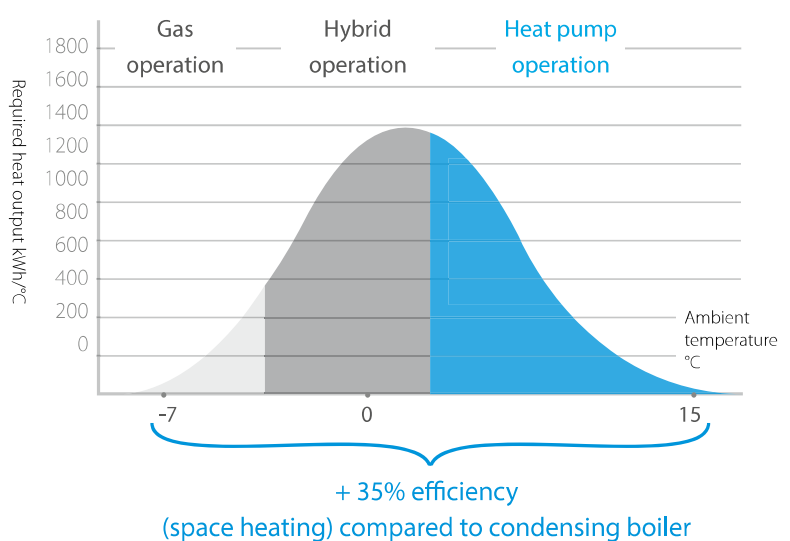
Comfort

Heating

A Daikin Altherma hybrid heat pump automatically determines the most economic and energy efficient heating combination

- › **Heat pump operation:** the best available technology for optimising running costs at moderate outdoor temperatures
- › **Hybrid operation:** both the gas boiler and heat pump operate simultaneously to deliver the ultimate comfort for your customer
- › **Gas operation:** when outdoor temperatures drastically drop, the unit will automatically switch to gas operation mode

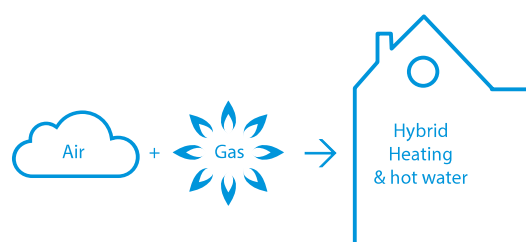
Illustration of an average European climate



- › Heat load: 14 kW
- › 70% heat pump output
- › 30% gas boiler output

Heat load = the capacity of the space heating system required to maintain comfortable indoor temperatures at any time

Required heat output = heat load x n° of occurring hours per year



Heat pump outdoor unit

Heat pump indoor unit

Hot water

The gas condensing boiler's dual heat exchanger increases hot water efficiency by up to 15% when compared with traditional gas boilers

Cooling

Incorporate cooling for a total solution that integrates seamlessly with underfloor heating or radiators

Quick and easy installation

As the heat pump indoor unit and gas condensing boiler are delivered as separate units, they are easier to handle, operate and install

Investment benefits

- › Combines with existing radiators; reducing the cost and disruption of installations
- › Coverage of heat loads up to 27 kW makes this unit ideal for renovation applications
- › Possible to connect to photovoltaic solar panels to optimise self-consumption of the electricity produced



Energy efficiency

The ideal combination

Depending on the outdoor temperature, energy prices and the internal heat load, the Daikin Altherma hybrid heat pump smartly chooses between the heat pump and/or the gas boiler, possibly in simultaneous operation, and always selects the most economic operation mode.

Supported by renewable energy

When working in heat pump mode, the system is powered by renewable energy extracted from the air and can achieve up to **A++ energy efficiency**.

Hot water produced with gas condensing technology

Unique dual heat exchanger increases efficiency up to 15% compared to traditional gas boilers

- › Cold tap water flows directly into the heat exchanger
- › Optimal and continuous condensing of the flue gases during domestic hot water preparation



Reliability

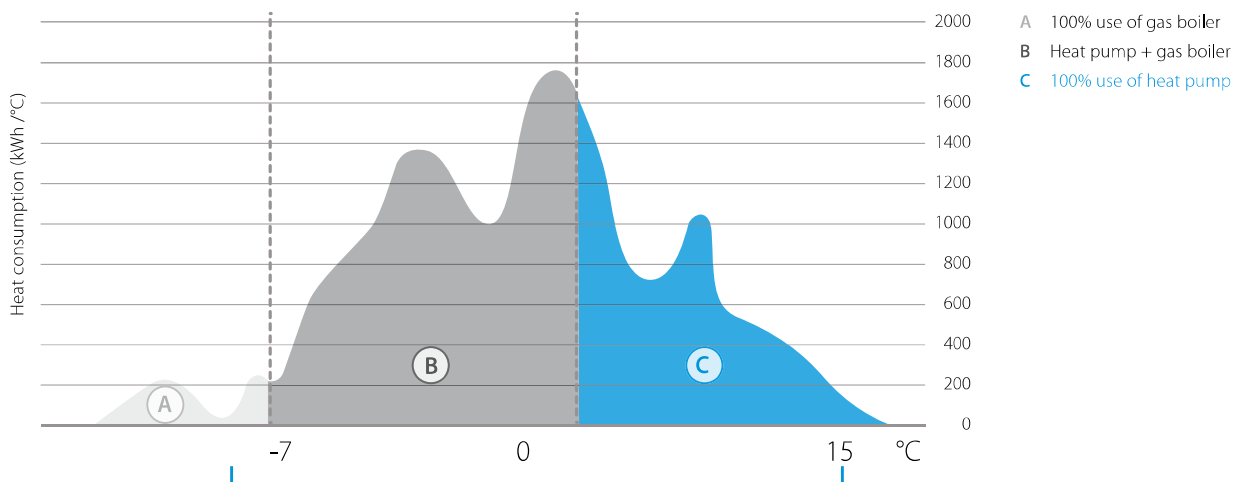
- › Low investment cost with no need to replace existing piping and radiators
- › Low running costs for heating and domestic hot water
- › Compact dimensions
- › Ideal for renovation applications
- › Easy and fast installation



Case study

Replacing a gas boiler with a Daikin Altherma hybrid heat pump means saving on running costs for both space heating and domestic hot water supply.

A running costs comparison is made below based on parameters for a typical Belgian winter. As a result of the hybrid principle, the most cost-efficient operation will be used no matter the ambient outdoor temperature.



+35% efficiency (space heating) compared to existing condensing gas boiler

	Daikin altherma hybrid heat pump	New gas condensing boiler	Existing gas condensing boiler
Space heating			
Energy supplied by HP	12,800 kWh		
HP efficiency	3.64 Scop		
Energy supplied by gas boiler	6,700 kWh	19,500 kWh	19,500 kWh
Space heating efficiency	90%	90%	75%
Running costs	1,220 €	1,520 €	1,820 €
DHW HEATING			
Energy supplied by gas boiler*	3,000 kWh	3,000 kWh	3,000 kWh
DHW heating efficiency*	90%	80%	65 %
Running costs*	230 €	260 €	320 €
TOTAL			
Running costs	1,450 €	1,780 €	2,140 €

Conditions

Heat load	16 kW
Design temperature	-8°C
Space heating off temperature	16°C
Maximum water temperature	60°C
Minimum water temperature	38°C
Gas price	0.070 €/kWh
Electricity price (day)	0.237 €/kWh
Electricity price (night)	0.152 €/kWh
Total space heating requirement	19,500 kWh
Total DHW heating requirement (4 persons)	3,000 kWh

* for combi-boiler, no separate domestic hot water tank

→ **Yearly savings:**
for space heating and domestic hot water

-19% versus new gas condensing boiler

330 €/year

-32% versus existing gas condensing boiler

690 €/year

Daikin Altherma hybrid heat pump

Hybrid technology combining condensing gas and air to water heat pump for heating and hot water

- › Heating only + heating and cooling models
- › Depending on outdoor temperature, energy prices and internal heat load, Daikin Altherma hybrid heat pump always selects the most economical mode to operate
- › Low investment cost: no need to replace the existing radiators (up to 80°C) and pipe work
- › Provides sufficient heat in renovation applications as all heat loads are covered up to 32kW
- › Easy and fast installation thanks to the compact dimensions and quick interconnections



Efficiency data					EHYHBH05AV32 + EVLQ05CV3	EHYHBH08AV32 + EVLQ08CV3	EHYHBX08AV3 + EVLQ08CV3
	Space heating	Average climate water outlet 55°C	General	SCOP	3.28	3.24	3.29
				η _{sp} (Seasonal space heating efficiency)	128	127	129
				Seasonal space heating eff. class	A++		
	Domestic hot water heating	General climate	Declared load profile		XL		
			Average	η _{wh} (water heating efficiency)	95.8		
			Water heating energy efficiency class		A		
Heating capacity	Nom.			kW	4.40(1) / 4.03(2)	7.40(1) / 6.89(2)	7.40(1) / 6.89(2)
Cooling capacity	Nom.			kW	-	-	6.86(1) / 5.36(2)
Power input	Heating	Nom.		kW	0.870(1) / 1.13(2)	1.66(1) / 2.01(2)	1.66(1) / 2.01(2)
	Cooling	Nom.		kW	-	-	2.01(1) / 2.34(2)
COP					5.04(1) / 3.58(2)	4.45(1) / 3.42(2)	4.45(1) / 3.42(2)
EER					-	-	3.42(1) / 2.29(2)

Indoor unit (Hydrobox & Boiler)					EHYHBH05AV32	EHYHBH08AV32	EHYHBX08AV3	EHYKOMB33AA2	EHYKOMB33AA3
Central heating	Heat input Q _h (net calorific value)	Nom	Min/Max	kW	-	-	-	6.2 / 7.6 / 7.6 / 22.1 / 27.0 / 27.0	
		Output P _h at 80/60°C	Min/Nom	kW	-	-	-	6.7 / 8.2 / 8.2 / 21.8 / 26.6 / 26.6	
	Efficiency		Net calorific value	%	-	-	-	98 / 107	
	Operation range		Min/Max	°C	-	-	-	15 / 80	
Domestic hot water	Output		Min/Nom	kW	-	-	-	7.6 / 32.7	
	Water flow	Rate	Nom	l/min	-	-	-	9.0 / 15.0	
		Operation range	Min/Max	°C	-	-	-	40 / 65	
	Connection		Diameter	mm	-	-	-	15	
Gas	Consumption (G20)		Min/Max	m ³ /h	-	-	-	0.78 / 3.39	
	Consumption (G25)		Min/Max	m ³ /h	-	-	-	0.90 / 3.93	
	Consumption (G31)		Min/Max	m ³ /h	-	-	-	0.30 / 1.29	
	Connection		Concentric	mm	-	-	-	100	
Flue gas	Connection		Concentric	mm	-	-	-	1	
	Connection		Concentric	mm	-	-	-	60	
Casing	Colour				White			White - RAL9010	
	Material				Precoated sheet metal			Precoated sheet metal	
Dimensions	Unit	HeightxWidthxDepth	Casing	mm	902x450x164			710x450x240	
Weight	Unit	Empty		kg	30.0	31.2		36	
Power supply	Phase/Frequency/Voltage			Hz/V	-	-	-	1~/50/230	
Electrical power consumption	Max.			W	-	-	-	55	
	Standby			W	-	-	-	2	
Operation range	Heating	Ambient	Min.~Max.	°C	-25 ~25			-	
		Water side	Min.~Max.	°C	25 ~55			-	
	Cooling	Ambient	Min.~Max.	°CDB	~~			-	
		Water side	Min.~Max.	°C	~~			-	
	Cooling	Ambient	Min.~Max.	°CDB	10 ~43			-	
		Water side	Min.~Max.	°C	5 ~22			-	

Outdoor unit				EVLQ05CV3		EVLQ08CV3	
Dimensions	Unit	HeightxWidthxDepth	mm	735x832x307			
Weight	Unit		kg	54		56	
Compressor	Quantity			1			
	Type			Hermetically sealed swing compressor			
Operation range	Heating	Min.~Max.	°CWB	-25~25			
Refrigerant	Type			R-410A			
	GWP			2,088			
	Charge		kg	1.5		1.6	
	Charge		TCO2Eq	3.0		3.3	
	GWP			2,088			
Sound power level	Heating	Nom.	dB(A)	61		62	
Sound pressure level	Heating	Nom.	dB(A)	48		49	
Power supply	Name/Phase/Frequency/Voltage		Hz/V	V3/1~/50/230			
Current	Recommended fuses		A	16		20	

(1) Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C) (2) Condition: Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C) (3) Cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C) (4) Cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)