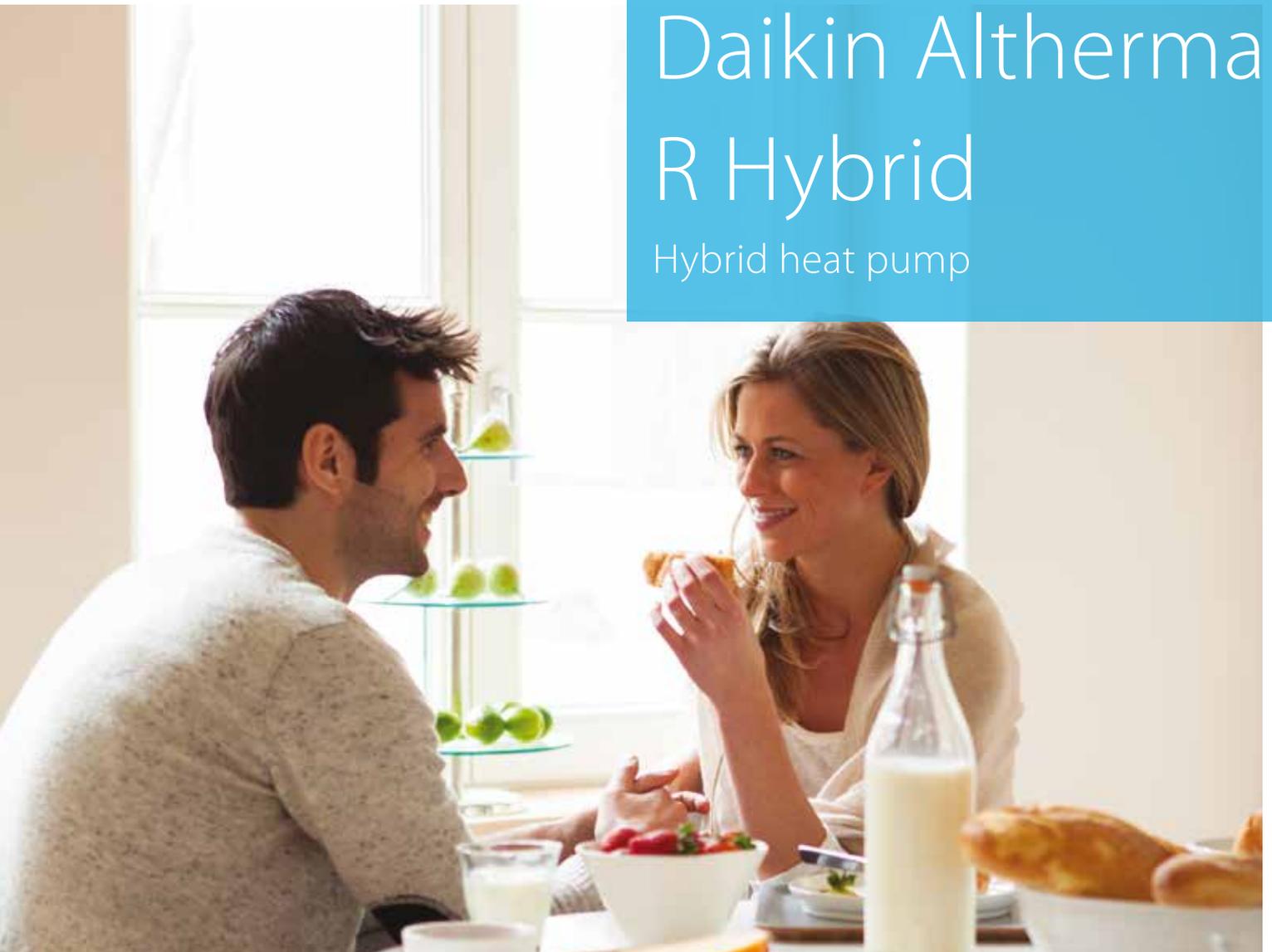


Daikin Altherma R Hybrid

Hybrid heat pump



The natural combination



Heat pump module



Boiler module

Daikin Altherma R Hybrid, the natural combination

TIME TO RETHINK HEATING

- › **Automatic switch** between heat pump, gas boiler or hybrid operations - always selecting the most economical mode.
- › **Low running costs** for heating and hot water compared to traditional boilers
- › Heat your existing home with **up to 60% renewable energy** without changing your radiators
- › Ideal for **renovation** applications
- › **Easy and fast** installation
- › Secure for future changes in gas and electricity prices
- › **Low cost of investment** and a **higher return** than a typical savings account

It's simple really – the Daikin Altherma Hybrid heat pump, with its use of a gas condensing boiler to deliver superior performance, offers a high level of all-year-round comfort with optimal use of the different technologies.

It is programmed to automatically select the right mix of the technologies to maximise the energy efficiency and deliver perfect comfort levels.





Why choose Daikin Altherma R Hybrid heat pump?

What the customer wants:

- › more energy efficient systems
- › more cost effective systems

Your solution: choose a Daikin Altherma R Hybrid heat pump

- › combination of gas condensing technologies and air-to-water heat pumps
- › delivers up to 35% more heating efficiency
- › optimises the operation of the most efficient gas condensing boilers

Customer benefits:

- › low running costs for heating and domestic hot water
- › low investment costs
- › ideal for renovation applications

Your gains:

- › modular construction
- › Easy and fast installation

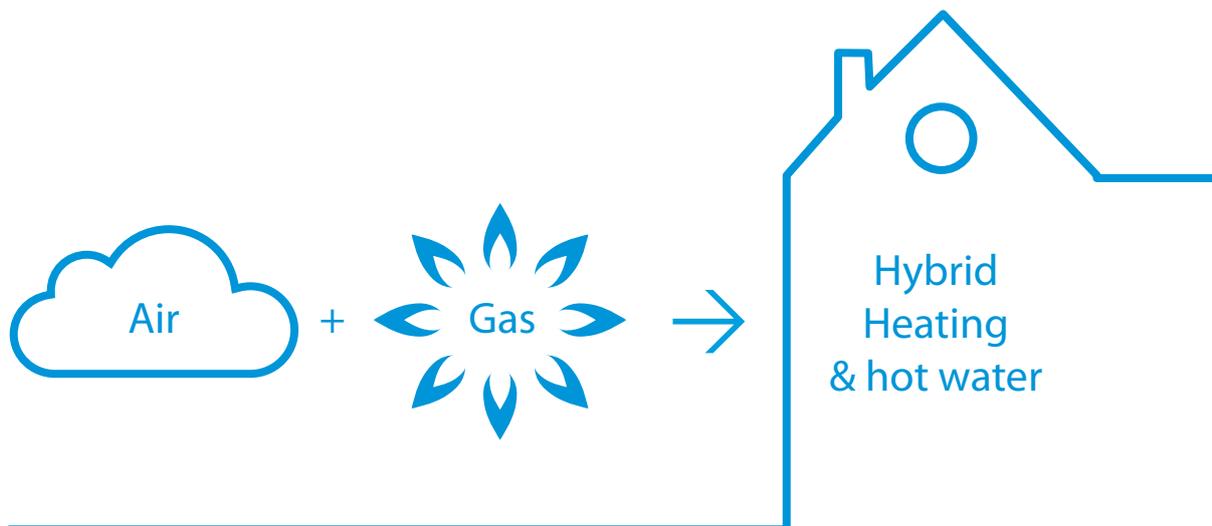
What is an air-to-water heat pump?

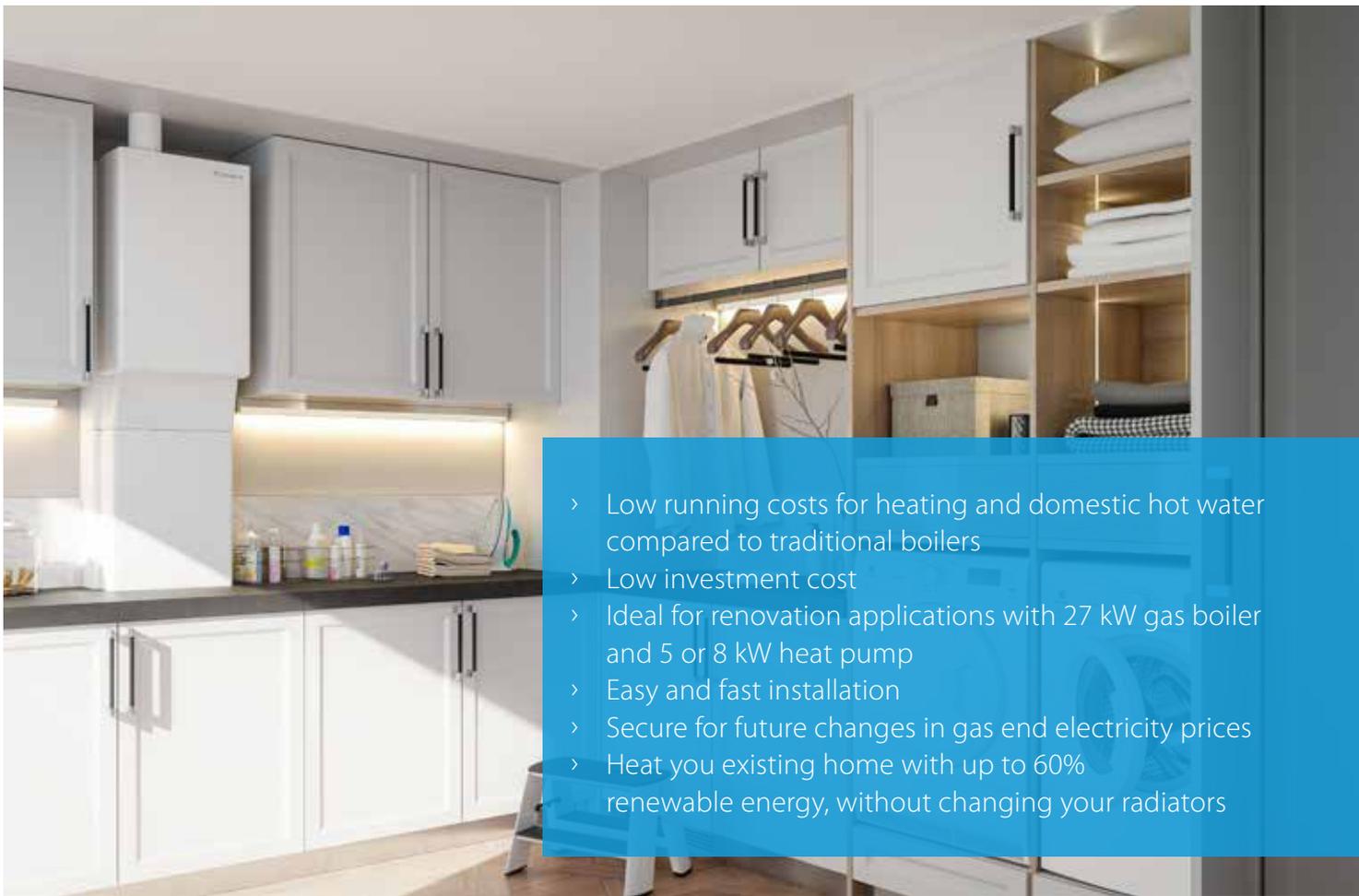
The Daikin Altherma air-to-water heat pump is a sustainable energy source: extracting heat from the outside air. In a closed loop containing a refrigerant, a thermodynamic cycle is created through evaporation, condensation, compression and expansion. This 'pumps' heat from a lower to a higher temperature level.

The heat gained is transferred to your home's central heating distribution system.

What is condensing boiler technology?

Condensing boiler technology converts the fuel used into usable heat, virtually without loss. This is both good for the environment and your wallet, since lower energy consumption means lower heating costs, less use of energy resources and a reduction in CO₂ emissions. During this process, flue gases are cooled to the extent that the steam they contain is condensed. The energy that is released by this process, is used as heating energy.





- > Low running costs for heating and domestic hot water compared to traditional boilers
- > Low investment cost
- > Ideal for renovation applications with 27 kW gas boiler and 5 or 8 kW heat pump
- > Easy and fast installation
- > Secure for future changes in gas end electricity prices
- > Heat your existing home with up to 60% renewable energy, without changing your radiators

Low running costs for heating and domestic hot water compared to traditional boilers

A. Space heating



Most economical mode

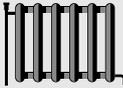
- > heat pump only
- > hybrid mode
- > gas only



Energy prices & Efficiency

Depending on the outdoor temperature, energy prices and the internal heat load, the Daikin Altherma R Hybrid heat pump smartly chooses between the heat pump and/or the gas boiler, possibly in simultaneous operation, always selecting the most economical mode to operate.

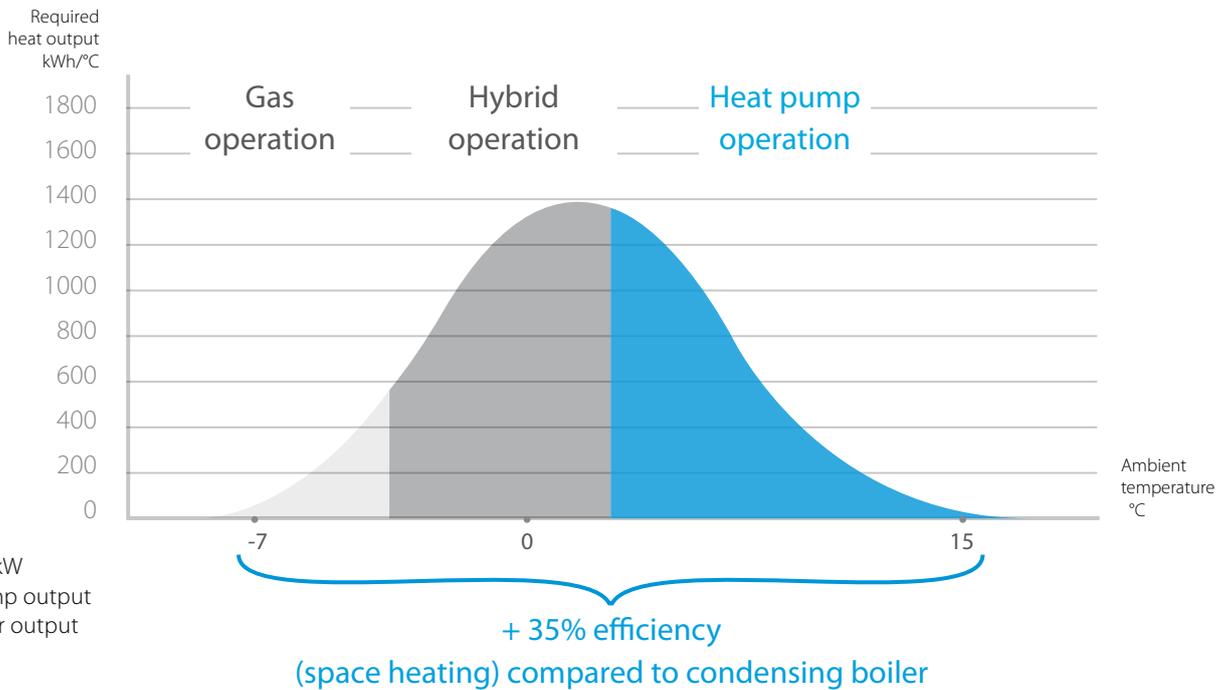
System efficiency

XL

*EHYHBH05AV32 / EVLQ05CV3 + EHYKOMB33AV2

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 operation

The heat pump integrated in the Daikin Altherma R Hybrid heat pump is the best available technology for optimizing running costs at moderate outdoor temperatures, resulting in a COP (Coefficient Of Performance) of 5.04!

temperature of the water flowing from the radiators to the heat pump and so maximizing the heat pump efficiency. The exact time the switch-over is made from heat pump operation to hybrid operation depends on the house characteristics, energy prices, the requested indoor temperature setting and the outdoor temperature.

Hybrid operation

If a high heat load is required, or to achieve the highest efficiencies at the current conditions, both the gas boiler and heat pump operate at the same time in the most economical way. The water flow rate will be automatically regulated, in order to have the possibility of lowering the

Gas operation

When outdoor temperatures are dropping drastically, it is no longer efficient to operate in hybrid mode. At that point, the unit will switch automatically to gas operation only.

(1) heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)

B. Domestic hot water

Hot water produced with gas condensing technology

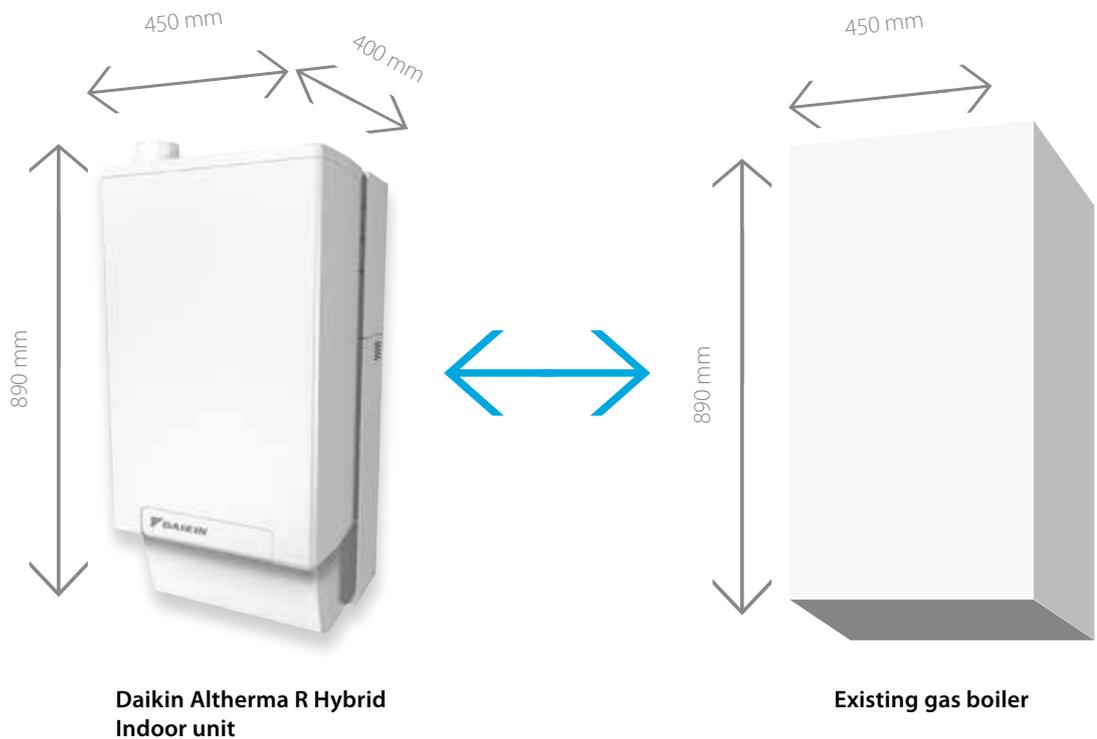
Efficiency increase up to 10-15% compared to traditional gas condensing boilers thanks to a special dual heat exchanger:

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



Low investment benefits

There is no need to replace the existing radiators (up to 80°C) and pipe work as our Daikin Altherma R Hybrid heat pump connects directly to the existing heating system, thus reducing the cost and disruption of installation. Thanks to the compact dimensions, the space needed for the new system is very similar to that of an existing system, so there is no loss of space and no need for structural modifications.



Ideal for renovation applications

Several applications are possible using the Daikin Altherma R Hybrid heat pump as all heat loads are covered up to 27 kW. The gas boiler can be installed without the heat pump in the early stages, in order to quickly restart heating in the case of a breakdown of the existing gas boiler.



Easy and fast installation: 3 components

- › Heat pump outdoor unit
- › Heat pump indoor unit
- › Gas condensing boiler

As the heat pump indoor unit and gas condensing boiler are delivered as separate units, they are easier to handle and manipulate, and easier to install. The heat pump indoor unit is easily mounted on the wall with a standard back plate. With the quick interconnections, the gas condensing boiler is easily attached to the heat pump indoor unit, resulting in a very compact unit. Similar to all wall mounted gas boilers, all the connections are at the bottom and all the components can be accessed from the front, which makes the unit easy to service and maintain.



Heat pump outdoor unit

Gas condensing boiler



Heat pump indoor unit

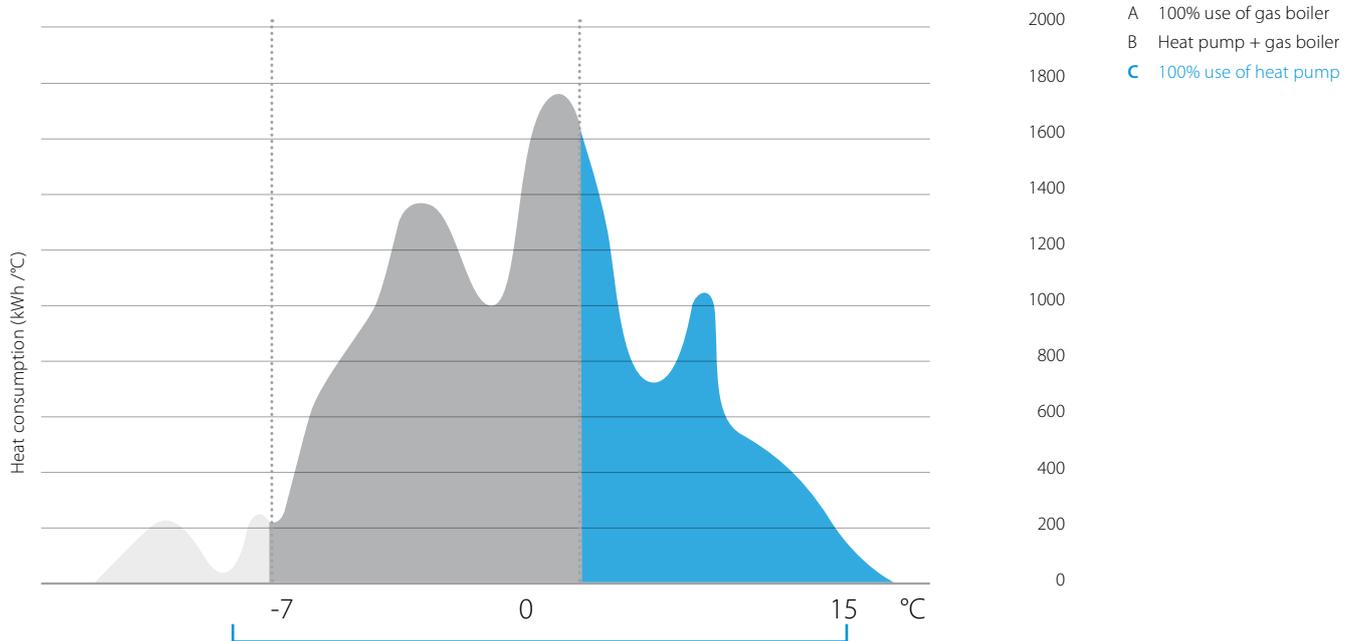
Replacing a gas boiler with a Daikin Altherma R Hybrid heat pump means saving on running costs for both space heating and the domestic hot water supply.



Case Study

Thanks to the hybrid principle, the most cost-efficient operation will be used no matter what the situation is.

Heat consumption during winter





	Daikin Altherma R Hybrid	New gas condensing boiler	Existing gas non-condensing boiler
Space heating requirement: 19,500 kWh			
Energy supplied by heat pump	12,800 kWh	-	-
Efficiency of heat pump	3.64 SCOP*	-	-
Running costs	€ 675	-	-
Energy supplied by gas boiler	6,700 kWh	19,500 kWh	19,500 kWh
Efficiency of gas boiler	90%	90%	75%
Running costs	€ 521	€ 1,517	€ 1,820
DHW heating requirement: 3,000 kWh			
Energy supplied by gas boiler	3,000 kWh	3,000 kWh	3,000 kWh
Efficiency of gas boiler	90%	80%	65%
Running costs	€ 233	€ 263	€ 323
Total Running costs	€ 1,429	€ 1,780	€ 2,143

* or 364%

→ Yearly savings: for space heating and domestic hot water

-20% versus new gas condensing boiler **351 €/year**

-33% versus existing gas non-condensing boiler **714 €/year**

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

Daikin Altherma R Hybrid

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 32 kW
- › Easy and fast installation thanks to the compact dimensions and quick interconnections



Efficiency data				EHYHBH05AV32 + EVLQ05CV3	EHYHBH08AV32 + EVLQ08CV3	EHYHBX08AV3 + EVLQ08CV3
Space heating	Average climate	General	SCOP	3.28	3.24	3.29
	water outlet		ηs (Seasonal space heating efficiency)	128	127	129
	55 °C		Seasonal space heating eff. class	A++		
Domestic hot water heating	General	Declared load profile		XL		
	Average climate		ηwh (water heating efficiency)	83.8		
			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 _{in} (net calorific value)	Nom	Min/Max	kW	-				6.2 / 7.6 / 7.6 / 22.1 / 27.0 / 27.0
	Output P _{in} 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
Gas	Connection	Diameter		mm	-				15
	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
Supply air	Connection			mm	-				100
	Concentric				-				1
Flue gas	Connection			mm	-				60
Casing	Colour				White				White - RAL9010
	Material				Precoated sheet metal				Precoated sheet metal
Dimensions	Unit	Height x Width x Depth	Casing	mm	902 x 450 x 164				710 x 450 x 240
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	---				10 ~43
		Water side	Min.~Max.	°C	---				5 ~22

Outdoor unit				EVLQ05CV3	EVLQ08CV3
Dimensions	Unit	Height x Width x Depth	mm	735 x 832 x 307	
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	
Charge	GWP			2,088	
	Charge		kg	1.5	1.6
	Charge		TCO ₂ -Eq	3.0	3.3
	GWP			2,088	
Sound power level	Heating	Nom.	dBA	61	62
Sound pressure level	Heating	Nom.	dBA	48	49
Power supply	Name/Phase/Frequency/Voltage		Hz/V	V3/1~/50/230	
Current	Recommended fuses		A	16	20

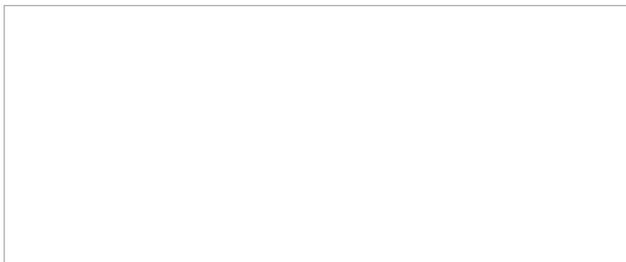
(1) Ta DB/WB 7 °C/6 °C - LW 35 °C (DT = 5 °C) (2) Condition: Ta DB/WB 7 °C/6 °C - LW 45 °C (DT=5 °C) (3) Cooling Ta 35 °C - LWE 18 °C, (DT = 5 °C); heating Ta DB/WB 7 °C/6 °C - LW 35 °C (DT = 5 °C). (4) Cooling Ta 35 °C - LWE 7 °C (DT = 5 °C); heating Ta DB/WB 7 °C/6 °C - LW 45 °C (DT = 5 °C). This product contains fluorinated greenhouse gases.

Options

		Type	Material name
Controllers		LAN adapter	BRP069A62
		LAN adapter + PV solar connection	BRP069A61
		Remote user interface (DE, FR, NL, IT)	EKRUCBL1
		Remote user interface (EN, ES, EL, PT)	EKRUCBL3
		Remote user interface (EN, SV, NO, FI)	EKRUCBL2
		Remote user interface (EN, TR, PL, RO)	EKRUCBL4
		Remote user interface (DE, CS, SL, SK)	EKRUCBL5
		Remote user interface (EN, HR, HU, BG)	EKRUCBL6
		Remote user interface (EN, DE, RU, DA)	EKRUCBL7
		Simplified user interface	EKRUCBSB
		Room thermostat (wired)	EKRTWA
		Room thermostat (wireless)	EKRTR1
		Heat meter (EHYHBH* only)	K.HEATMET
		DCOM gateway	DCOM-LT/IO
		DCOM gateway	DCOM-LT/MB
Drain		Drain pan for reversible H/B	EKHYDP1
Installation		Cover plate 35	EKHY093467
		Installation jig	EKHYMNT1
Sensor		External sensor	EKRTETS
Valve		Valve kit for connection to 3rd party tank with built-in thermostat	EKHY3PART2
		Valve kit for connection to 3rd party tank with sensor pocket	EKHY3PART
Propane set		Propane set	EKHY075787



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ECPEN21-729

09/21



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