

SAMSUNG

# EHS Mono R290

Discover our new  
home solution

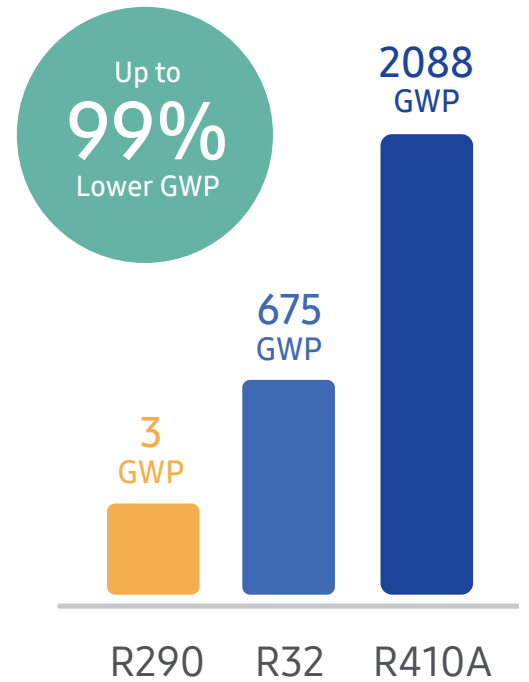
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# Say hello to our new heat pump featuring R290

Samsung's newest addition to its EHS heat pump line-up, the EHS Mono R290, offers a new home solution for residential homes. The EHS Mono R290 uses R290 as its refrigerant. R290 has a much lower Global Warming Potential (GWP) of only 3 when compared to other refrigerants R32 and R410A. According to the new EU F-Gas regulations, refrigerants must not exceed 150 GWP from 2025.

The EHS Mono R290 is available in a broader range of capacities fitting with varying project requirements – 5, 8, 12, and 16 kW. The 5 and 8 kW units are only 850mm in height, compared to the larger 12 and 16 kW units which measure approximately 1000mm. It complements any outdoor living space with its sleek and compact design.





## Higher hot water temperature

Many older houses in Europe are still using radiators which require a hot water temperature of 65°C or higher to heat rooms effectively. The new EHS Mono R290 combines advanced features to consistently provide hot water of up to 75°C<sup>1</sup> for domestic heating purposes. This makes it a suitable heating system replacement in older residential spaces that have been previously dependent on gas boilers for their heating needs. Additionally it can supply domestic hot water of up to 70°C<sup>2</sup> when the outdoor temperature is as low as -10°C without using the booster heater.

**Enlarged Heat Transfer Area** up to 39.6% larger<sup>3</sup> to help exchange heat quickly.

**Strengthened Compression Parts** to endure the higher pressure needed to generate hotter water, the new R290 Compressors have strengthened compression parts. As a result, they have an increased compression ratio<sup>4</sup>, while still maintaining the efficiency and reliability of the compressors.



## Easy installation and servicing

Installation and servicing of the EHS Mono R290 can be done without needing an F-gas certification. Additionally, the outdoor unit of the EHS Mono R290 is designed to be simple to install and maintain. The heat pump's internal parts are easily accessible via the side panel which can be removed simply by undoing 3 screws. This significantly saves time and effort during the installation as well as the servicing process.



## Quiet operation

Powered by a combination of innovative noise reducing technologies, the EHS Mono R290 operates quietly with noise levels as low as 35 d(BA)<sup>5</sup> using a 4-step Quiet Mode. This heat pump's outdoor unit features a double-layered, sound insulation system fitted with a patented Groove Grid Felt design<sup>6</sup>, which effectively blocks and absorbs noise produced by compression parts and vibrations.

1. Leaving water temperature when the outdoor temperature is -10~35°C. Results may vary depending on the actual usage conditions. 2. Domestic hot water (DHW) leaving the DHW tank is 70°C when the outdoor temperature is -10~43°C. If the outdoor temperature is lower than -10°C, a booster heater is required. Results may vary depending on the actual usage conditions. 3. Based on Samsung's measurements on an EHS R290 Mono (AE080CXVDGK/EU) model compared to a conventional outdoor unit (AE080RXYDGG/EU) with the same capacity. 4. Compression ratio = Discharge pressure / Suction pressure. Based on internal testing on an EHS MONO R290 12/16kW outdoor unit, compared to a DVM R410A outdoor unit. 5. Based on internal testing of the EHS Mono R290 outdoor unit. The noise level is measured 3m away from the front of the outdoor unit, in an anechoic room with an outside temperature of 7°C. Results may vary depending on environmental factors and individual use. 6. Patent No.: P2022-0012826



## Made to work with R290

The EHS Mono R290 uses R290 as a refrigerant instead of the commonly used R32 refrigerant. As R290 refrigerant is being used, the inside components of the unit have been adapted when compared to a regular mono heat pump. These adaptations support the separation of R290 refrigerant and the rest of the system.

**1. Leakage prevention** - A robust design alleviates pressure in the pipe to prevent gas escaping

**2. Leakage detection** - Sensors monitor the refrigerant and water pressures to detect leakages

**3. Exhaust system** - A forced exhaust system ventilates the inside of the outdoor unit to keep it below the Lower Explosive Limit. An Air Separator in the leaving water pipe prevents the leaked gas from entering the house.

**4. Ignition prevention** Potential ignition sources are sealed and located higher up in the outdoor unit.



## Aesthetic design

The EHS Mono R290 is styled in a dark grey color which complements the current design trend for modern building exteriors and adds elegance to a multitude of outdoor facades from renovation builds to luxury homes. The outdoor unit, approximately 1000mm or 850mm in height<sup>8</sup>, is fitted with a new slanted black grille composition which screens its inner mechanics from sight<sup>9</sup>.



## SmartThings energy integration

SmartThings Energy<sup>10</sup> offers the ultimate home energy management systems, and real energy savings through rich insights, energy saving automations, and support for users to move towards a net zero home. Once connected, users can monitor their energy usage and with the saving mode potentially reduce their energy consumption<sup>11</sup>.



## Asses malfunction from a distance

The EHS Mono R290 is compatible with the EHS Cloud Service. EHS Cloud Service can provide professionals with a wealth of technical data and insights<sup>12</sup> regarding the EHS device being services. From error reports to malfunction types, and from status checks to energy consumption information. EHS Cloud Service allows professionals to know what's going on at a customer's before even making the trip.<sup>12</sup>

8. Height depends on capacity chosen. 5kW and 8 kW capacity 850mm height. 12 and 16 kW 1018mm height. 9. Based on a viewing height of 1700mm and a viewing distance of 1m. 10. Available on Android and iOS devices. A Wi-Fi connection, Samsung account and an optional Wi-Fi Kit (MIM-H04N) are required. 11. Amount of costs saved are dependent on various factors such as a user's electricity plan, indoor/outdoor temperature and other usage conditions. With the SmartThings App, user may for example programme the relevant Samsung indoor unit when the electricity price is offered at its lowest price or turn off the unit when not in use to minimize energy consumption. 12. Only available on Samsung products which are compatible with this service and to the extent the end-user has agreed to the terms and conditions of the service and consented to the privacy notice applicable. A separate Wi-Fi Kit may be required for the EHS unit.



# Specifications

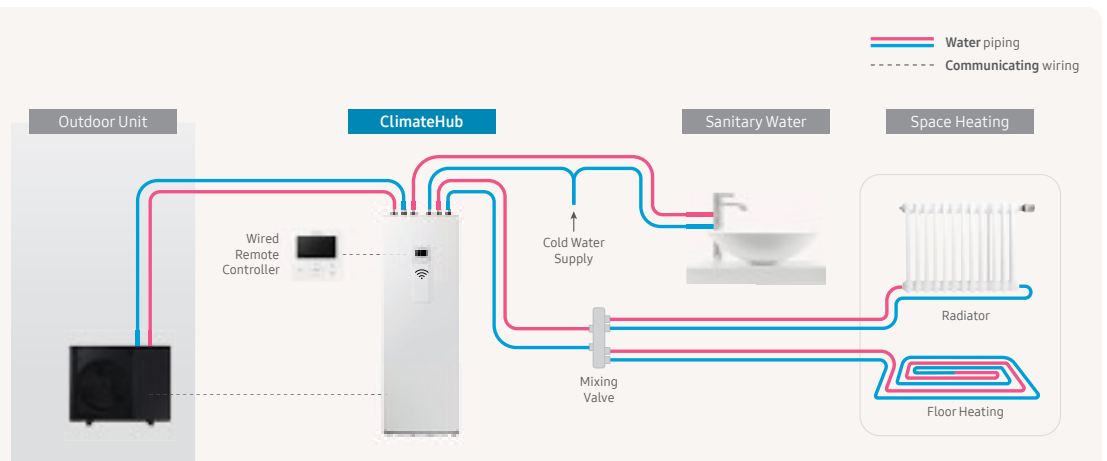
Outdoor Unit	Indoor Unit	Control/Interface					
							
5.0/8.0kW (R290)	12.0/16.0kW (R290)	ClimateHub (200/260L)	Mono Control Kit	Wi-Fi Kit	Wired Remote Controller	Touch Controller	DMS2.5

			AE050CXDEK	AE080CXDEK	AE120CXDEK	AE160CXDEK	AE080CXDGK	AE120CXDGK	AE160CXDGK
<b>Capacity</b>									
Capacity*	Heating (A7/W35)	kW	5.0	8.0	12.0	16.0	8.0	12.0	16.0
	Cooling (A35/W18)	kW	5.0	8.0	12.0	14.0	8.0	12.0	14.0
<b>Performance</b>									
Leaving Water Temperature	Heating	°C	15-75	15-75	15-75	15-75	15-75	15-75	15-75
	Cooling	°C	5-25	5-25	5-25	5-25	5-25	5-25	5-25
Efficiency	SCOP Class (35°C)		A+++	A+++	A+++	A+++	A+++	A+++	A+++
	SCOP Class (55°C)		A++	A++	A++	A++	A++	A++	A++
Sound Pressure**	Normal	dB(A)	41	45	47	51	45	47	51
	Quiet Mode	dB(A)	35	35	35	35	35	35	35
Operating Temperature Range	Heating	°C	-25-35	-25-35	-25-35	-25-35	-25-35	-25-35	-25-35
	Cooling	°C	10-46	10-46	10-46	10-46	10-46	10-46	10-46
<b>Electrical Data</b>									
Power Supply		Φ, V	1Φ, 2Line, 220-240V, 50Hz	1Φ, 2Line, 220-240V, 50Hz	1Φ, 2Line, 220-240V, 50Hz	1Φ, 2Line, 220-240V, 50Hz	3Φ, 4Line, 380-415V, 50Hz	3Φ, 4Line, 380-415V, 50Hz	3Φ, 4Line, 380-415V, 50Hz
<b>Refrigerant</b>									
Refrigerant Type			R290 (GWP=3)	R290 (GWP=3)	R290 (GWP=3)	R290 (GWP=3)	R290 (GWP=3)	R290 (GWP=3)	R290 (GWP=3)
Water Pipe	Inlet/Outlet	mm	BSPP male 1"/BSPP male 1"	BSPP male 1"/BSPP male 1"	BSPP male 1"/BSPP male 1"	BSPP male 1"/BSPP male 1"	BSPP male 1"/BSPP male 1"	BSPP male 1"/BSPP male 1"	BSPP male 1"/BSPP male 1"
<b>Dimensions</b>									
Net Dimensions	W x H x D	mm	998 x 850 x 500	998 x 850 x 500	1270 x 1018 x 530	1270 x 1018 x 530	998 x 850 x 500	1270 x 1018 x 530	1270 x 1018 x 530

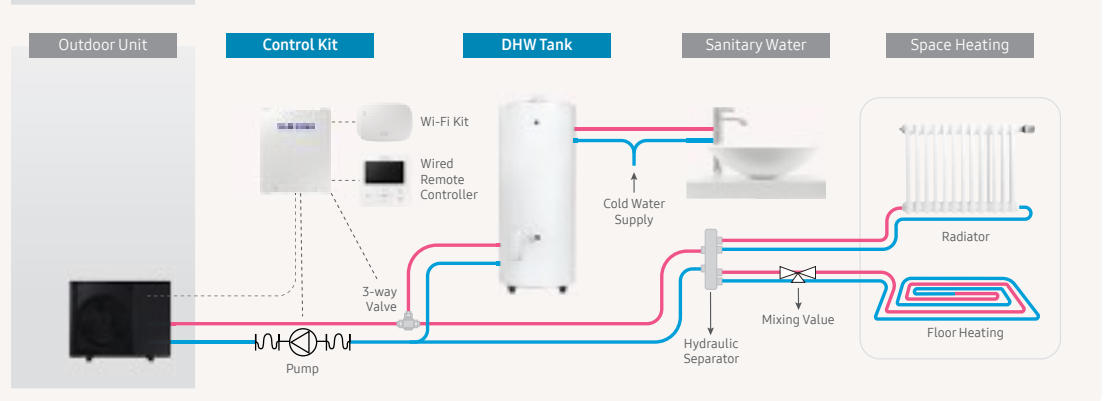
The available line-up, including capacities and models, may vary by region. Features and specifications are subject to change without notice.  
 \* A2W Condition: (Heating) Water In/Out 30°C/35°C, Outdoor Air 7°C [DB] /6°C [WB]; (Cooling) Water In/Out 23°C/18°C, Outdoor Air 35°C [DB].  
 \*\* Sound pressure level is obtained in an anechoic room. Sound pressure level is a relative value, depending on the distance and acoustic environment.  
 Sound pressure level may differ depending on operation conditions.

## System Configuration

### 1. EHS Mono R290 with ClimateHub



### 2. EHS Mono R290 with Control Kit & 3rd Party DHW Tank



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Learn more about Samsung Climate Solutions at:  
[www.samsung.com/climate](http://www.samsung.com/climate)

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