

SAMSUNG

EHS Mono R290 & EHS Mono R290 Pump

Discover our new
home solution

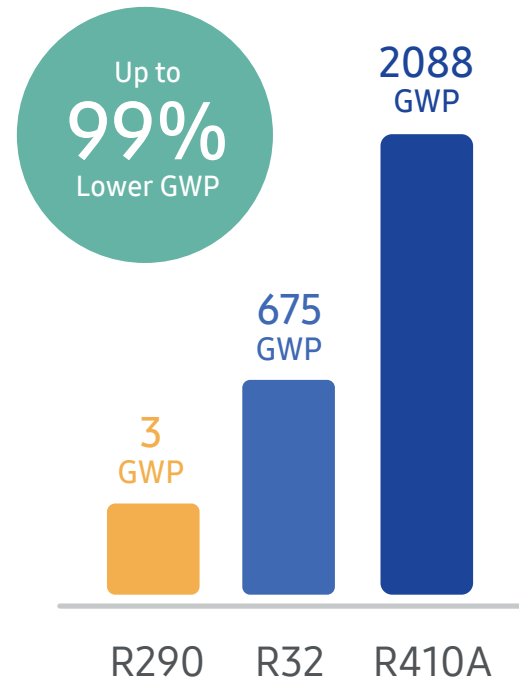
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Say hello to our new heat pump featuring R290

Samsung's newest additions to its EHS heat pump line-up: the EHS Mono R290 and EHS Mono R290 Pump, offers a new home solution for residential homes. The newest additions use R290 as its refrigerant. R290 has a much lower Global Warming Potential (GWP) of only 3 when compared to other refrigerants R32 (= 675) and R410A (=2088).

The EHS Mono R290 and the EHS Mono R290 Pump are available in a broader range of capacities fitting with varying project requirements – 5, 8, 12, and 16 kW. The 5 and 8 kW unit are only 850mm in height and the 12 and 16 kW units measure approximately 1000mm. It complements any outdoor living space with its sleek and compact design. Furthermore, EHS Mono R290 Pump has hydraulics components, like the pump and expansion tank, included in the outdoor unit as well as the control kit and the wi-fi kit. Reducing installation time and requires less indoor space. Beside it is set-up for being SmartThings and EHS cloud services ready.





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 and EHS Mono R290 Pump combines advanced features to consistently provide hot water of up to 75°C¹ for domestic heating purposes. This makes it a suitable heating system replacement in older residential spaces that have been previously dependent on fossil fuel boilers for their heating needs. Additionally it can produce domestic hot water of up to 70°C² when the outdoor temperature is as low as -10°C without using the booster heater.

Enlarged Heat Transfer Area up to 39.6% larger⁴ 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 ratio⁴, while still maintaining the efficiency and reliability of the compressors.



Easy installation and servicing

Installation and servicing of the EHS Mono R290 and EHS Mono R290 Pump can be done without needing an F-gas certification. Additionally, the outdoor unit of newest additions 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. The hydraulics components, like the pump and expansion tank, are included in the EHS Mono R290 Pump outdoor unit as well as the control kit and the wi-fi kit assure 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 & EHS Mono R290 Pump operates quietly with noise levels as low as 35 d(BA)⁵ 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 design⁶, 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 R291 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.: P2022-0012827



Made to work with R290

The refrigerant that is used is R290 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 avoids internal tension and cracks that can cause leakages.
- 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 properly located in the outdoor unit.



SmartThings energy integration

SmartThings Energy¹⁰ offers the ultimate home energy management systems through rich insights, energy saving automations, and support for users.

Once connected, users can monitor their energy usage and with the AI Energy mode potentially reduce their energy consumption¹¹.



Assess malfunction from a distance

The EHS Mono R290 and EHS Mono R290 Pump is compatible with the EHS Cloud Service. EHS Cloud Service can provide professionals with a wealth of technical data and insights¹² 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.¹²











Aesthetic design

The EHS Mono R290 and EHS Mono R290 Pump 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 height⁸, is fitted with a new slanted black grille composition which screens its inner mechanics from sight⁹.




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. When activated by the end-user, SmartThings AI Energy mode can provide users with a possibility to save energy and/or costs with regard to their domestic hot water usage based on (repeatable) user patterns. A compatible Samsung Climate Hub is required. The Climate Hub is only compatible with the EHS Mono R290. The actual savings vary and depend on, amongst others, usage and operating conditions. The AI Energy mode may impact the product performance. All savings are estimates and can deviate from actual usage and costs. End user may deactivate the AI Energy mode at any time. 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 in the SmartThings app and consented to the privacy notice applicable. A separate Wi-Fi kit may be required for the EHS Mono R290. EHS Cloud does not constitute advice regarding installation, maintenance or other topics, and the information provided through EHS Cloud Service does not confer any right.



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

			AE050CXUDEK	AE080CXUDEK	AE120CXUDEK	AE160CXUDEK	AE080CXUDGK	AE120CXUDGK	AE160CXUDGK	
Capacity										
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	
Performance										
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	
Electrical Data										
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	
Refrigerant										
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"	
Dimensions										
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	

Outdoor Unit		Indoor Unit		Control/Interface			
							
5.0/8.0kW (R290)	12.0/16.0kW (R290)	Wired Remote Controller	Touch Controller	DMS2.5			

			AE050CXYBEK/EU	AE080CXYBEK/EU	AE080CXYBGK/EU	AE120CXYBEK/EU	AE120CXYBGK/EU	AE160CXYBEK/EU	AE160CXYBGK/EU	
Capacity										
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	
Performance										
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	
Electrical Data										
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	
Refrigerant										
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"	
Dimensions										
Net Dimensions	W x H x D	mm	1,270 x 850 x 500	1,270 x 850 x 500	1270 x 1018 x 530	1270 x 1018 x 530	1,270 x 1,018 x 530	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.

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Samsung Electronics Co., Ltd. participates in the Eurovent Certification Programme (ECP) for Air Conditioners (AC), Variable Refrigerant Flow (VRF) and Liquid Chilling Packages Heat Pump (LCP-HP). To check the ongoing validity of certification, please visit: www.eurovent-certification.com

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