

# ECODESIGN & ENERGY LABELLING INFORMATION

Samsung Gen 5 air to water Heat Pump  
9kW monobloc



## **I. Abstract**

Welcome to the Ecodesign and Energy labelling directive guide for the Samsung Gen 5 monobloc 9kW air to water heat pump - by Joule Energy Solutions. The purpose of this document is to fulfil the requirements of the directive Eu No. 813/2013. The directive ensures the correct product information is available to BER assessors, Engineers and specifiers alike. The information within this guide is fully compliant with the directive and provides everything needed to fulfil the SEAI requirements for DEAP methodology.

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## **1. Introduction**

Welcome to the Ecodesign and Energy labelling data for the Samsung Gen 5 monobloc 9kW air to water heat pump - by Joule Energy Solutions. The purpose of this document is to fulfil the requirements of the directive Eu No. 813/2013. The directive ensures the correct product information is available to BER assessors, Engineers and specifiers alike. The information within this guide is fully compliant with the directive and provides everything needed to fulfil the SEAI requirements for DEAP methodology.

Section two will cover the instruction manual & technical parameters, as outlined in; 5. REQUIREMENTS FOR PRODUCT INFORMATION, of ANNEX II, COMMISSION DELEGATED REGULATION (Eu) No 813/2013.

Section three will cover the Heat Pump product labels, as outlined in: COMMISSION DELEGATED REGULATION (Eu) No 811/2013.

NOTE: Hot water cylinder labels & fiches are available on request- as the possible combinations can differ from project to project.

## **2. Product information**

### **2.1. Instruction manuals**

Instruction manuals for installers and end-users are provided with each unit. However, they are also available to download from Joule's website at the following link; <https://www.joule.ie/knowledge-centre/>

A copy of the installation manual will also accompany this guide.

### **2.2. Test data**

In line with Eco Design Directive 813/2013, all updated results are available in the knowledge centre section of our website; <https://www.joule.ie/knowledge-centre/>

## 2.3. Technical parameters

The following documents outline the performance results of the 9kW unit at part load conditions in low (35°) and medium (55°) temperature applications respectively.

### 2.3.1. Low temperature application


Information requirements for heat pump space heaters and heat pump combination heaters- 813/2013							
Model: Samsung AE090JXYDEH & Joule 200L H.G Cyclone							
Air-to-water heat pump: Yes							
Water-to-water heat pump: No							
Brine-to-water heat pump: No							
Low-temperature heat pump: Yes							
Equipped with a supplementary heater: Yes							
Heat Pump combination heater: Yes							
Parameters are declared for: low-temperature application							
Parameters are declared for: average climate conditions							
Item	Symbol	Value	Unit				
<b>Rated heat output</b>	<i>Prated</i>	7	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	176	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature $T_j$				Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature $T_j$			
$T_j = -7^\circ\text{C}$	<i>Pdh</i>	6.00	kW	$T_j = -7^\circ\text{C}$	<i>COPd</i>	2.63	-
$T_j = +2^\circ\text{C}$	<i>Pdh</i>	3.70	kW	$T_j = +2^\circ\text{C}$	<i>COPd</i>	4.20	-
$T_j = +7^\circ\text{C}$	<i>Pdh</i>	2.40	kW	$T_j = +7^\circ\text{C}$	<i>COPd</i>	6.11	-
$T_j = +12^\circ\text{C}$	<i>Pdh</i>	2.20	kW	$T_j = +12^\circ\text{C}$	<i>COPd</i>	9.37	-
$T_j = \text{operation limit temperature}$	<i>Pdh</i>	6.80	kW	$T_j = \text{operation limit temperature}$	<i>COPd</i>	2.55	-
Bivalent temperature	<i>Tbiv</i>	-10.00	°C	Operation limit temperature	<i>TOL</i>	-10	°C
Degradation co-efficient	<i>Cdh</i>	0.9	-	Heating water operating limit temperature	<i>WTOL</i>	55	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	0.08	kW	Rated heat output	<i>P<sub>sup</sub></i>	3	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	0.011	kW	Type of energy Input	Electricity		
Standby mode	<i>P<sub>SB</sub></i>	0.011	kW	Outdoor sound power level	<i>L<sub>WA</sub></i>	63	dB
Crankcase heater mode	<i>P<sub>CK</sub></i>	0	kW				
Other items							
Capacity control	Variable						
For heat pump combination heater:							
<b>Declared load profile</b>	L			<b>Water heating energy efficiency</b>	$\eta_{wh}$	145	%
Standby cylinder heat loss	2.064		kWh	Reference hot water temperature	51.07 °C		
				DHW volume accounted for in test	200 L		
Contact details	Joule IE, Kylemore Park West, Ballyfermot, Dublin 10.						

Figure 1: Declared capacity & coefficient of performance for low temperature application

## 2.3.2. Medium temperature application

### Information requirements for heat pump space heaters and heat pump combination heaters- 813/2013

Model: Samsung AE090JXYDEH & Joule 200L H.G Cyclone

Air-to-water heat pump: Yes

Water-to-water heat pump: No

Brine-to-water heat pump: No

Low-temperature heat pump: No

Equipped with a supplementary heater: Yes

Heat Pump combination heater: Yes

Parameters are declared for: medium-temp application

Parameters are declared for: average climate conditions

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Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
<b>Rated heat output</b>	<b><i>P<sub>rated</sub></i></b>	<b>6.2</b>	<b>kW</b>	<b>Seasonal space heating energy efficiency</b>	<b><math>\eta_s</math></b>	<b>126</b>	<b>%</b>
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature $T_j$				Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature $T_j$			
$T_j = -7^\circ\text{C}$	<i>P<sub>dh</sub></i>	5.50	kW	$T_j = -7^\circ\text{C}$	<i>COP<sub>d</sub></i>	1.89	-
$T_j = +2^\circ\text{C}$	<i>P<sub>dh</sub></i>	3.30	kW	$T_j = +2^\circ\text{C}$	<i>COP<sub>d</sub></i>	3.01	-
$T_j = +7^\circ\text{C}$	<i>P<sub>dh</sub></i>	2.20	kW	$T_j = +7^\circ\text{C}$	<i>COP<sub>d</sub></i>	4.25	-
$T_j = +12^\circ\text{C}$	<i>P<sub>dh</sub></i>	2.20	kW	$T_j = +12^\circ\text{C}$	<i>COP<sub>d</sub></i>	6.78	-
<i>T<sub>j</sub> = operation limit temperature</i>	<i>P<sub>dh</sub></i>	6.20	kW	<i>T<sub>j</sub> = operation limit temperature</i>	<i>COP<sub>d</sub></i>	1.77	-
Bivalent temperature	<i>T<sub>biv</sub></i>	-10.00	°C	Operation limit temperature	<i>TOL</i>	-10	°C
Degradation co-efficient	<i>C<sub>dh</sub></i>	0.9	-	Heating water operating limit temperature	<i>WTOL</i>	55	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P<sub>OFF</sub></i>	0.08	kW	Rated heat output	<i>P<sub>sup</sub></i>	3	kW
Thermostat-off mode	<i>P<sub>TO</sub></i>	0.011	kW	Type of energy Input	Electricity		
Standby mode	<i>P<sub>SB</sub></i>	0.011	kW	Outdoor sound power level	<i>L<sub>WA</sub></i>	63	dB
Crankcase heater mode	<i>P<sub>CK</sub></i>	0	kW				
Other items							
Capacity control	Variable						
For heat pump combination heater:							
<b>Declared load profile</b>	L			<b>Water heating energy efficiency</b>	$\eta_{wh}$	145	%
Standby cylinder heat loss	2.064		kWh	Reference hot water temperature	51.07 °C		
				DHW volume accounted for in test	200 L		
Contact details	Joule IE, Kylemore Park West, Ballyfermot, Dublin 10.						

Figure 2: Declared capacity & coefficient of performance for medium temperature application



### 3. Product labels

This section covers the heat pump product labels, as outlined in: COMMISSION DELEGATED REGULATION (Eu) No 811/2013.

#### 3.1. Heat Pump space heater

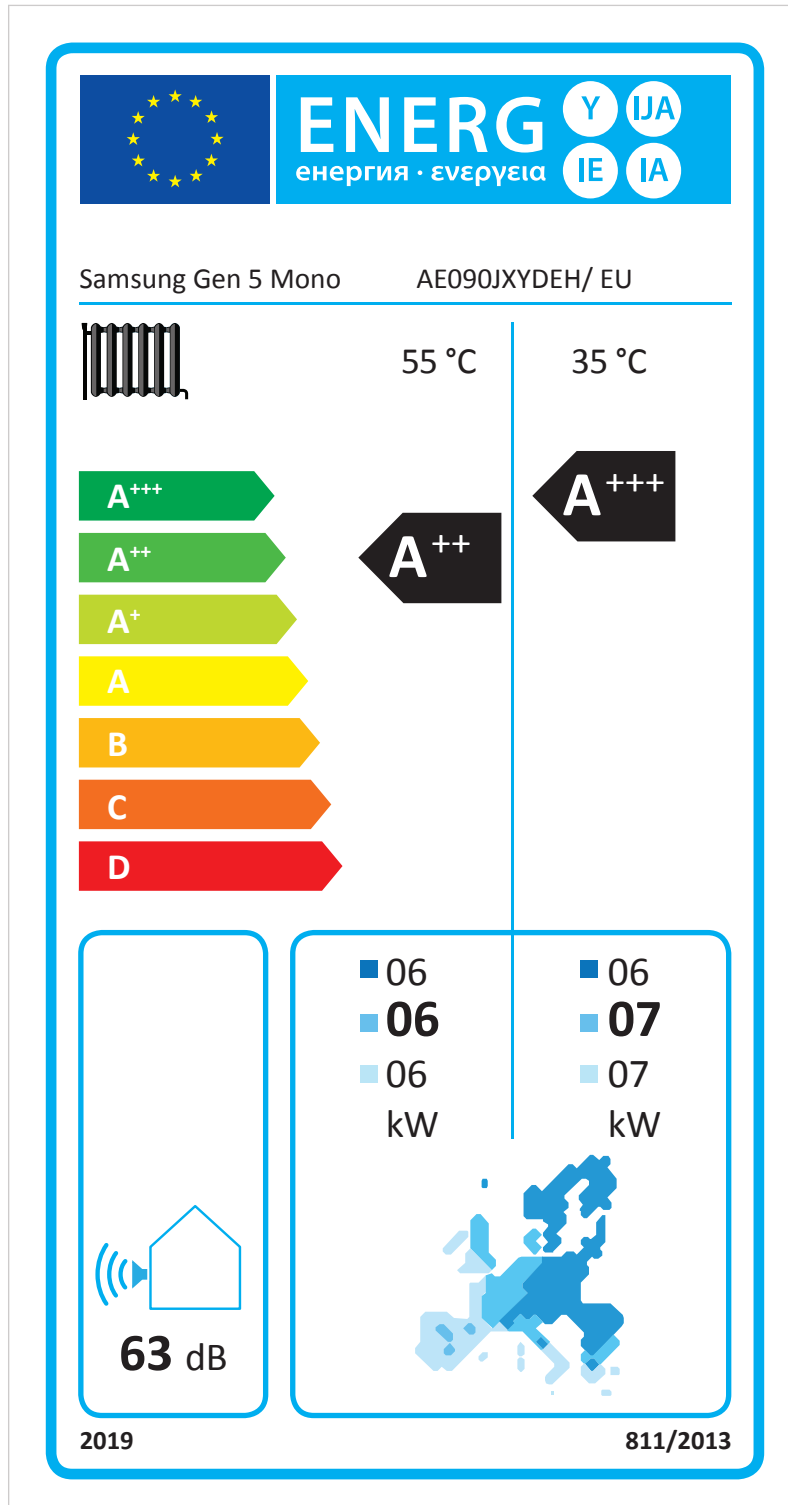


Figure 3: Heat Pump space heater label

### 3.2. Heat Pump combination heater

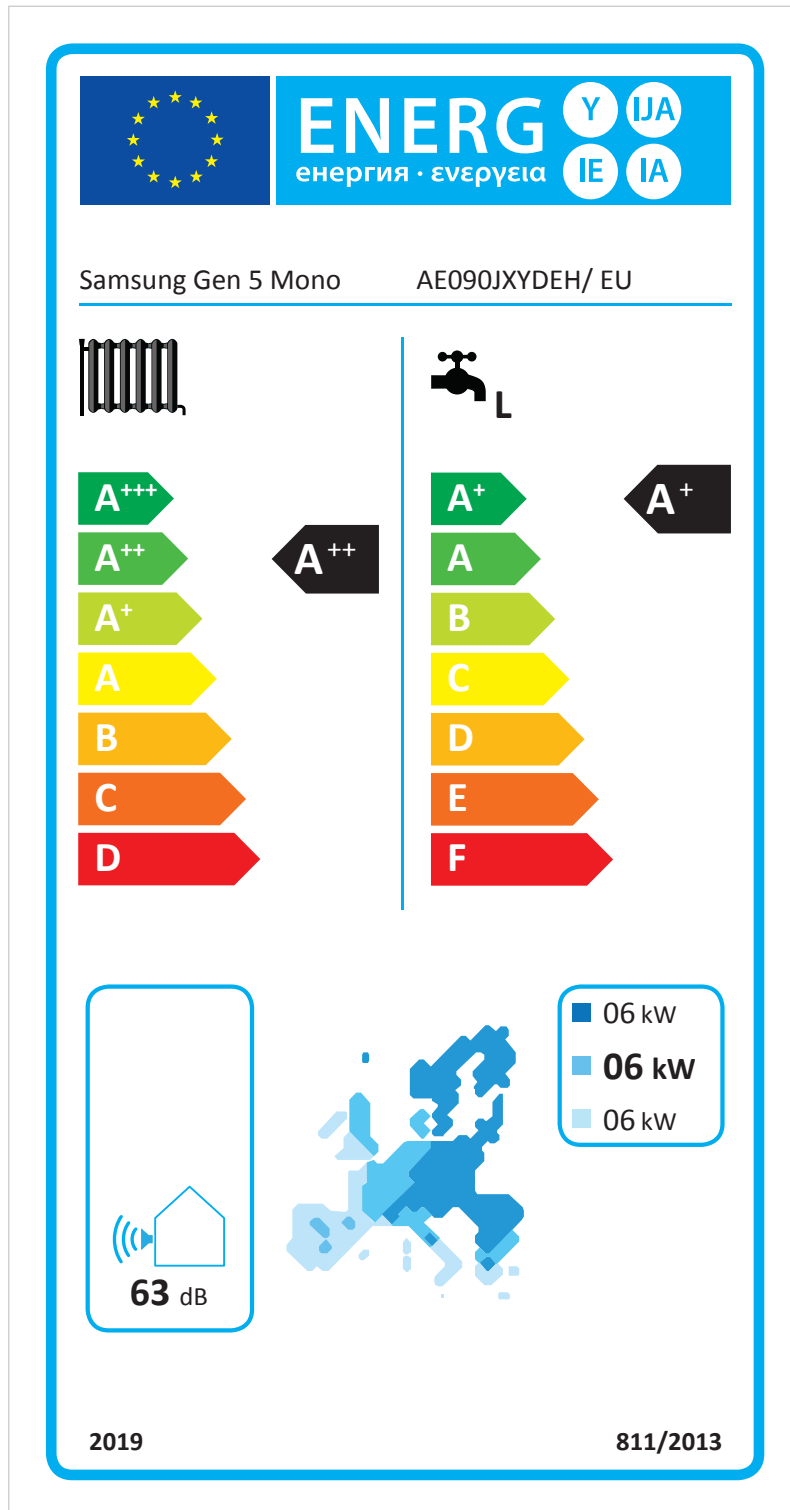


Figure 4: Heat Pump combination heater label

#### 4. Declaration of Conformity

Below is the CE certificate for the 9kW monobloc unit.



## Declaration of Conformity

### Product details

#### For the following

**Product** : Space heaters and Combination heaters

**Model(s)** : Outdoor unit(s)  
AE090JXYDEH



### Declaration & Applicable standards

We hereby declare under our sole responsibility that the product above is in compliance with the essential requirements of the Low Voltage Directive (2006/95/EC) and the Electromagnetic Compatibility Directive (2004/108/EC) by application of:

EN 60335-1:2002 +A11:2004 +A1:2004 +A12:2006  
+A2:2006 + A13:2008 + A14:2010 +A15:2011

EN 60335-2-40:2003+A11:2004+A12:2005+A1:2006  
+A2:2009+A13:2012

EN 55014-1:2006 +A1:2009 +A2 :2011

EN 55014-2:1997 +A1:2001 +A2:2008

EN 61000-3-12:2011

EN 61000-3-11:2000

EN 62233:2008

and the Eco-Design Directive (2009/125/EC) implemented by Regulation (EU) No 327/2011 for fans driven by motors and the Directive (2011/65/EU) on the restriction of the use of certain hazardous substances in electrical and electronic equipment by application of EN 50581:2012

### Representative in the EU

Samsung Electronics Euro QA Lab.  
Blackbushe Business Park  
Saxony Way, Yateley, Hampshire  
GU46 6GG, UK

Year of affixing CE marking : 2015

27 Feb. 2015

(Place and date of issue)

Stephen Colclough / EU Representative

(Name and signature of authorized person)

※ This is not the address of Samsung Service Centre. For the address or the phone number of Samsung Service Centre, see the warranty card or contact the retailer where you purchased your product.

Figure 5: CE certificate

## **5. References**

- COMMISSION DELEGATED REGULATION (Eu) No 811/2013.
- COMMISSION DELEGATED REGULATION (Eu) No 813/2013.

## 6. Contact details

Queries on any of the information in this guide can be directed to the Joule design team at: [design@joule.ie](mailto:design@joule.ie) or alternatively at (01) 623 7080.

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