

ECODESIGN & ENERGY LABELLING INFORMATION

Samsung Gen 5 air to water Heat Pump
12kW monobloc



Rev 01
Joule Energy Solutions

I. Abstract

Welcome to the Ecodesign and Energy labelling directive guide for the Samsung Gen 5 monobloc 12kW 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 12kW 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;

<http://www.jouleuk.co.uk/wp-content/uploads/2015/10/Wiring-Diagrams-Installation-Manual1.pdf>

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

2.2. Technical parameters

The following documents outline the performance results of the 12kW unit at part load conditions in low (35°) and medium (55°) temperature applications respectively.

2.2.1. Low temperature application

Information requirements for heat pump space heaters and heat pump combination heaters- 813/2013							
Model: Samsung AE120JXYDEH & Joule 300L 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	Item	Symbol	Value	Unit
Rated heat output	<i>Prated</i>	10.6	kW	Seasonal space heating energy efficiency	η_s	178	%
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>	9.40	kW	$T_j = -7^\circ\text{C}$	<i>COPd</i>	2.55	-
$T_j = +2^\circ\text{C}$	<i>Pdh</i>	5.70	kW	$T_j = +2^\circ\text{C}$	<i>COPd</i>	4.21	-
$T_j = +7^\circ\text{C}$	<i>Pdh</i>	3.70	kW	$T_j = +7^\circ\text{C}$	<i>COPd</i>	6.43	-
$T_j = +12^\circ\text{C}$	<i>Pdh</i>	3.30	kW	$T_j = +12^\circ\text{C}$	<i>COPd</i>	10.44	-
$T_j = \text{operation limit temperature}$	<i>Pdh</i>	10.60	kW	$T_j = \text{operation limit temperature}$	<i>COPd</i>	2.52	-
Bivalent temperature	<i>Tbiv</i>	-10.00	°C	Operation limit temperature	TOL	-10	°C
Degradation co-efficient	<i>Cdh</i>	0.9	-	Heating water operating limit temperature	WTOL	55	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0.08	kW	Rated heat output	<i>P_{SH}</i>	3	kW
Thermostat-off mode	<i>P_{TO}</i>	0.011	kW	Type of energy input	Electricity		
Standby mode	<i>P_{SB}</i>	0.011	kW	Outdoor sound power level	<i>L_{WA}</i>	64	dB
Crankcase heater mode	<i>P_{CK}</i>	0	kW				
Other items							
Capacity control	Variable						
For heat pump combination heater:							
Declared load profile	L			Water heating energy efficiency	η_{wh}	95.5	%
Standby cylinder heat loss	2.352			Reference hot water temperature	49.43		
			kWh	DHW volume accounted for in test	263		
							°C
							L
Contact details				Joule IE, Kylemore Park West, Ballyfermot, Dublin 10.			

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

2.2.2. Medium temperature application

Information requirements for heat pump space heaters and heat pump combination heaters- 813/2013							
Model: Samsung AE120JXYDEH & Joule 300L 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-temperature application							
Parameters are declared for: average climate conditions							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	Prated	8	kW	Seasonal space heating energy efficiency	η_s	115	%
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			
$T_j = -7^\circ\text{C}$	P_{dh}	7.10	kW	$T_j = -7^\circ\text{C}$	COP_d	1.76	-
$T_j = +2^\circ\text{C}$	P_{dh}	4.30	kW	$T_j = +2^\circ\text{C}$	COP_d	2.79	-
$T_j = +7^\circ\text{C}$	P_{dh}	3.30	kW	$T_j = +7^\circ\text{C}$	COP_d	3.73	-
$T_j = +12^\circ\text{C}$	P_{dh}	3.30	kW	$T_j = +12^\circ\text{C}$	COP_d	6.71	-
$T_j = \text{operation limit temperature}$	P_{dh}	8.00	kW	$T_j = \text{operation limit temperature}$	COP_d	1.51	-
Bivalent temperature	T_{biv}	-10.00	°C	Operation limit temperature	TOL	-10	°C
Degradation co-efficient	C_{dh}	0.9	-	Heating water operating limit temperature	WTOL	55	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0.08	kW	Rated heat output	P_{sup}	3	kW
Thermostat-off mode	P_{TO}	0.011	kW	Type of energy input	Electricity		
Standby mode	P_{SB}	0.011	kW				
Crankcase heater mode	P_{CK}	0	kW				
Other items				Outdoor sound power level			
Capacity control	Variable			L_{WA}	64 dB		
For heat pump combination heater:							
Declared load profile	L			Water heating energy efficiency	η_{wh}	95.5	%
Standby cylinder heat loss	2.352		kWh	Reference hot water temperature	49.43 °C		
				DHW volume accounted for in test	263 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

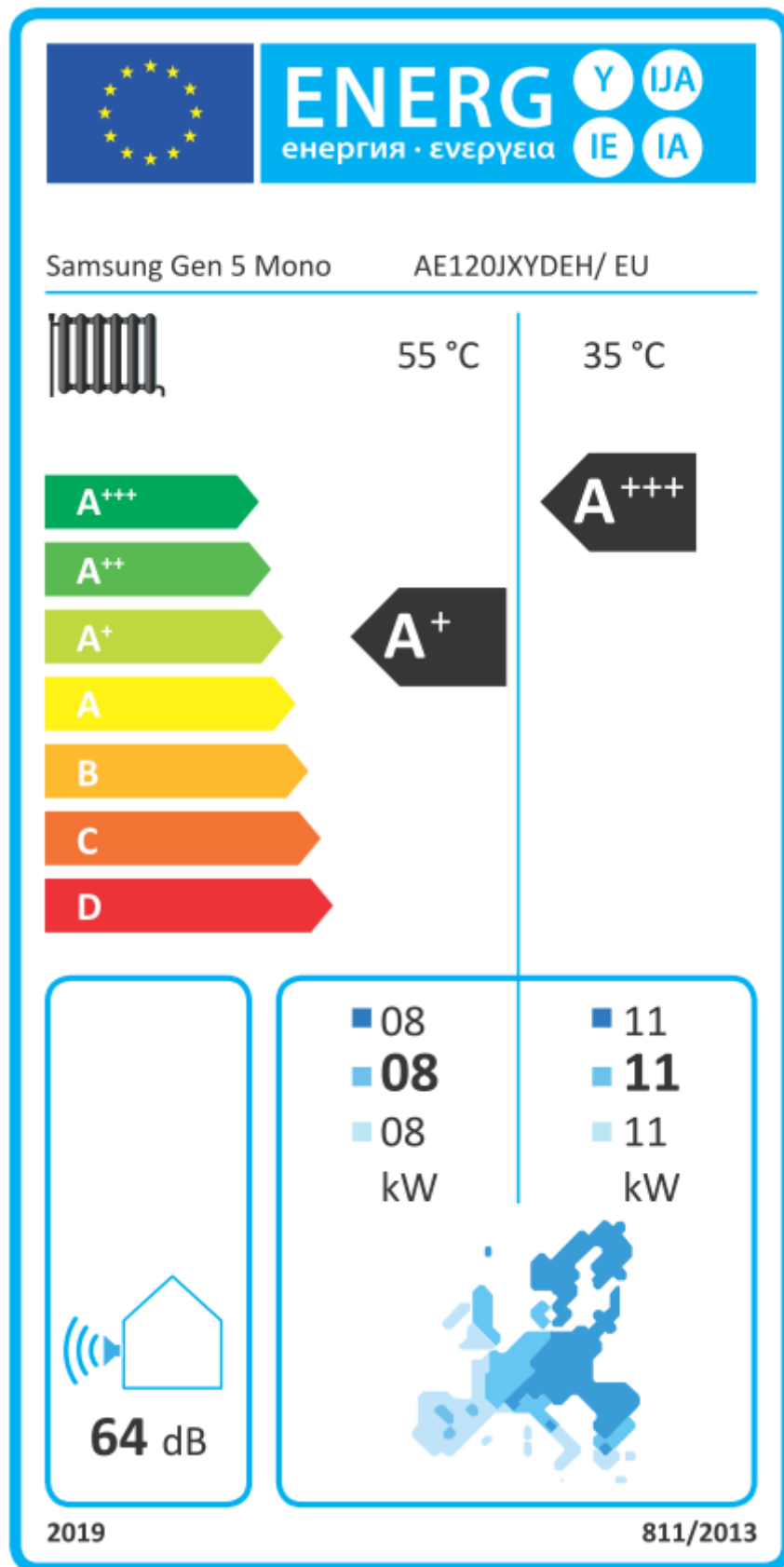


Figure 3: Heat Pump space heater label

3.2. Heat Pump combination heater

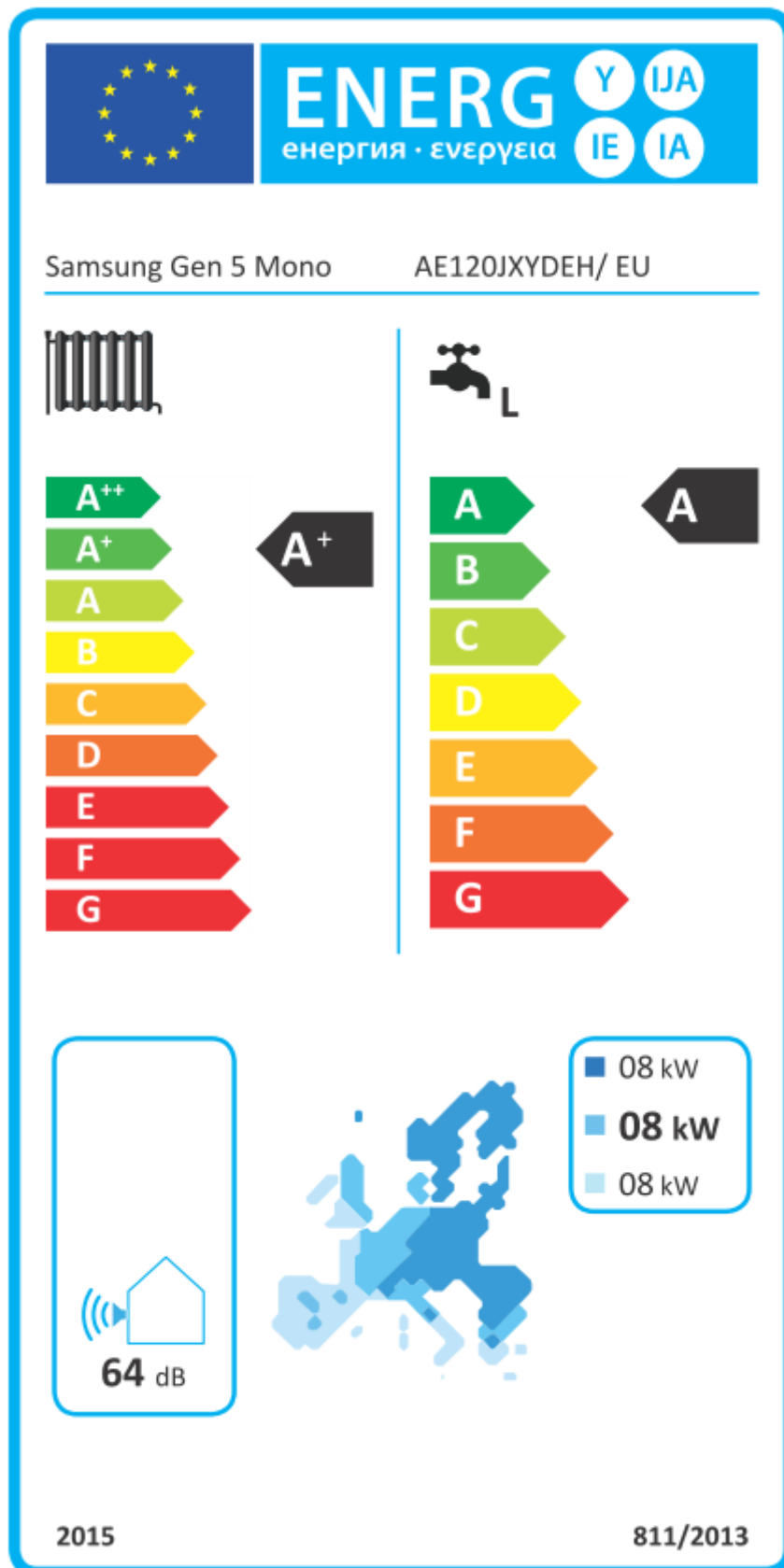


Figure 4: Heat Pump combination heater label

4. Declaration of Conformity

Below is the CE certificate for the 12kW monobloc unit.



Declaration of Conformity

Product details

For the following

Product : Space heaters and Combination heaters
Outdoor unit(s)

Model(s) : AE160JXYDEH AE140JXYDEH
AE120JXYDEH



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 60335-1:2012 +A11:2014

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 or alternatively at (01) 623 7080.

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