ECODESIGN & ENERGY LABELLING INFORMATION

Samsung Gen 5 air to water Heat Pump
5kW monobloc

SAMSUNG

joule
Manufacturing Excellence

REV 02
Joule Energy Solutions
I. Abstract

Welcome to the Ecodesign and Energy labelling directive guide for the Samsung Gen 5 monobloc 5kW 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 5kW 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/](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/](https://www.joule.ie/knowledge-centre/)
2.3. Technical parameters

The following documents outline the performance results of the 5kW unit at part load conditions in low (35°) and medium (55°) temperature applications respectively.

### 2.3.1. Low temperature application

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated heat output</td>
<td>Prated</td>
<td>5</td>
<td>kW</td>
</tr>
<tr>
<td>Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature $T_j$</td>
<td>$P_{dh}$</td>
<td>4.40</td>
<td>kW</td>
</tr>
<tr>
<td>$T_j = -7,^\circ C$</td>
<td>$P_{dh}$</td>
<td>2.70</td>
<td>kW</td>
</tr>
<tr>
<td>$T_j = +2,^\circ C$</td>
<td>$P_{dh}$</td>
<td>2.20</td>
<td>kW</td>
</tr>
<tr>
<td>$T_j = +7,^\circ C$</td>
<td>$P_{dh}$</td>
<td>2.20</td>
<td>kW</td>
</tr>
<tr>
<td>$T_j = +12,^\circ C$</td>
<td>$P_{dh}$</td>
<td>5.00</td>
<td>kW</td>
</tr>
<tr>
<td>Bivalent temperature</td>
<td>$T_{biv}$</td>
<td>-10.00</td>
<td>°C</td>
</tr>
<tr>
<td>Degradation co-efficient</td>
<td>$C_{dh}$</td>
<td>0.9</td>
<td>-</td>
</tr>
</tbody>
</table>

**Power consumption in modes other than active mode**

- **Off mode**
  - $P_{off}$: 0.08 kW
- **Thermostat-off mode**
  - $P_{TO}$: 0.011 kW
- **Standby mode**
  - $P_{st}$: 0.011 kW
- **Crankcase heater mode**
  - $P_{CK}$: 0 kW

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplementary heater</td>
<td>$P_{sup}$</td>
<td>3</td>
<td>kW</td>
</tr>
<tr>
<td>Type of energy Input</td>
<td></td>
<td>Electricity</td>
<td></td>
</tr>
<tr>
<td>Outdoor sound power level</td>
<td>$L_{WA}$</td>
<td>61</td>
<td>dB</td>
</tr>
</tbody>
</table>

For heat pump combination heater:

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared load profile</td>
<td>$L$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standby cylinder heat loss</td>
<td></td>
<td>2.064</td>
<td>kWh</td>
</tr>
</tbody>
</table>

**Water heating energy efficiency**

- $\eta_{wh}$: 128%

**Reference hot water temperature**

- 50.85 °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 AE050JXYDEH & 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

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated heat output</td>
<td>Prated</td>
<td>5</td>
<td>kW</td>
</tr>
<tr>
<td>Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature T_j</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T_j = -7°C</td>
<td>Pdh</td>
<td>4.20</td>
</tr>
<tr>
<td></td>
<td>T_j = +2°C</td>
<td>Pdh</td>
<td>2.50</td>
</tr>
<tr>
<td></td>
<td>T_j = +7°C</td>
<td>Pdh</td>
<td>2.20</td>
</tr>
<tr>
<td></td>
<td>T_j = +12°C</td>
<td>Pdh</td>
<td>2.20</td>
</tr>
<tr>
<td>Bivalent temperature</td>
<td>Tbiv</td>
<td>-10.00</td>
<td>°C</td>
</tr>
<tr>
<td>Degradation co-efficient</td>
<td>Cdh</td>
<td>0.9</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonal space heating energy efficiency</td>
<td>η_s</td>
<td>125</td>
<td>%</td>
</tr>
<tr>
<td>Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature T_j</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T_j = -7°C</td>
<td>COPd</td>
<td>2.24</td>
</tr>
<tr>
<td></td>
<td>T_j = +2°C</td>
<td>COPd</td>
<td>2.90</td>
</tr>
<tr>
<td></td>
<td>T_j = +7°C</td>
<td>COPd</td>
<td>4.02</td>
</tr>
<tr>
<td></td>
<td>T_j = +12°C</td>
<td>COPd</td>
<td>7.25</td>
</tr>
<tr>
<td>Operation limit temperature</td>
<td>TOL</td>
<td>-10</td>
<td>°C</td>
</tr>
<tr>
<td>Heating water operating limit temperature</td>
<td>WTOL</td>
<td>55</td>
<td>°C</td>
</tr>
</tbody>
</table>

Power consumption in modes other than active mode

<table>
<thead>
<tr>
<th>Mode</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off mode</td>
<td>P_off</td>
<td>0.08</td>
<td>kW</td>
</tr>
<tr>
<td>Thermostat-off mode</td>
<td>P_{th}</td>
<td>0.011</td>
<td>kW</td>
</tr>
<tr>
<td>Standby mode</td>
<td>P_{sb}</td>
<td>0.011</td>
<td>kW</td>
</tr>
<tr>
<td>Crankcase heater mode</td>
<td>P_{ck}</td>
<td>0</td>
<td>kW</td>
</tr>
</tbody>
</table>

Other items

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity control</td>
<td>Variable</td>
<td></td>
</tr>
<tr>
<td>Outdoor sound power level</td>
<td>L_{WA}</td>
<td>61</td>
</tr>
</tbody>
</table>

For heat pump combination heater:

<table>
<thead>
<tr>
<th>Declared load profile</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standby cylinder heat loss</td>
<td>2.064 kWh</td>
</tr>
</tbody>
</table>

Water heating energy efficiency

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference hot water temperature</td>
<td>50.85</td>
<td>°C</td>
</tr>
<tr>
<td>DHW volume accounted for in test</td>
<td>200</td>
<td>L</td>
</tr>
</tbody>
</table>

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**

![Heat Pump space heater label](image)

**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 5kW monobloc unit.

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**Declaration of Conformity**

**Product details**

For the following

- **Product**: Space heaters and Combination heaters
- **Model(s)**: Outdoor unit(s)
  - AE050JXYDEH

**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 61000-3-2:2011
- EN 61000-3-11:2000
- EN 62233:2008


**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

03 Jun. 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.

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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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