

DEAP 4.2 INPUTS

Add New Item To Library

Create Library Item

BASIC PROPERTIES

HEAT PUMP TEST DATA

Item Type *

Heat Source

Item Name *

S-Combi 7.5kW 260L

Keywords *

Hitachi S-Combi

Manufacturer *

Hitachi

Model *

RAS-3.0WHVRP & RWD-3.0NRWE-260S

Heating Source Type *

Heat Pumps

Heat Pump Type *

Air to Water

Space Heating Standard *

I.S. EN 14825

Water Heating Standard *

I.S. EN 16147

Season Space Heating Efficiency, η_s [%] *

125

Water Heating Efficiency, η_{wh} [%] *

136

Temperature Control (Capacity Control) *

Variable Outlet

Integrated Immersion

Flow Temperature \geq [60/65°C]

TOL *

-10

WTOL *

55

CANCEL

SAVE

Create Library Item

BASIC PROPERTIES

HEAT PUMP TEST DATA

 Heating System Test Data: I.S. EN14825

 Test Condition Low (35°C)

| | A(88%) | B(54%) | C(35%) | D(15%) | E*(100%) |
|------------------------------------|-------------|-------------|-------------|-------------|-------------|
| | -7°C | 2°C | 7°C | 12°C | TOL |
| Source | A-7 | A2 | A7 | A12 | A-10 |
| Sink | W52 | W42 | W36 | W30 | W55 |
| Heating Capacity (kW) | <u>5.90</u> | <u>3.59</u> | <u>3.20</u> | <u>3.50</u> | <u>6.40</u> |
| Coefficient of Performance (KW/KW) | <u>2.65</u> | <u>4.30</u> | <u>7.00</u> | <u>9.70</u> | <u>2.30</u> |

 Test Condition High (55°C) *

| | A(88%) | B(54%) | C(35%) | D(15%) | E*(100%) |
|------------------------------------|-------------|-------------|-------------|-------------|-------------|
| | -7°C | 2°C | 7°C | 12°C | TOL |
| Source | A-7 | A2 | A7 | A12 | A-10 |
| Sink | W52 | W42 | W36 | W30 | W55 |
| Heating Capacity (kW) | <u>5.10</u> | <u>3.10</u> | <u>2.00</u> | <u>2.20</u> | <u>5.00</u> |
| Coefficient of Performance (KW/KW) | <u>1.84</u> | <u>3.10</u> | <u>4.65</u> | <u>6.55</u> | <u>1.50</u> |

 Heating System Test Data: I.S. EN16147

| | | |
|---|--------------------------------------|--|
| Source of Data * | Coefficient of Performance (KW/KW) | Water Heating Efficiency, η_{wh} [%] |
| Water Heating Efficiency | | <u>136</u> |
| Reference Hot Water Temperature (°C) * | | Capacity of Heat Pump (kW) * |
| <u>54</u> | | <u>6</u> |
| Declared Load Profile * | Standby Heat Loss [kWh/day] * | Volume of DHW accounted for in test (Litre) * |
| <u>XL</u> | <u>1.85</u> | <u>350</u> |

CANCEL

SAVE

Edit Primary Heat Source

| Product Details | | Survey Details | |
|---|---------------------------------|---|-------------|
| Type | Heat Pumps | Heat % * | 100 |
| Heat Pump Type | Air to Water | Fuel Type | Electricity |
| Manufacturer | Hitachi | <input checked="" type="checkbox"/> Heats Water | |
| Model | RAS-3.0WHVRP & RWD-3.0NRWE-260S | Design Flow Temperature (°C) * | As Required |
| Seasonal Space Heating Efficiency, η_s | 125 | Daily Operation (h) * | 24 |
| <p>This is the Ecodesign Seasonal Space Heating Efficiency, η_s. When the survey is completed, the efficiency will be updated to reflect the performance of the heat pump in this dwelling.</p> | | Backup Space Heater Fuel | Electricity |
| Eff. Adj. Factor | 1 | Back Up Space Heater Efficiency (%) * | 100 |
| VIEW DETAILS IN LIBRARY | | Backup Water Heater Fuel | Electricity |
| | | Back Up Water Heater Efficiency (%) * | 100 |



Hot Water Tab

Options & Storage

Solar

Heat Source

Options

Distribution Losses Storage Losses Is supplementary electric water heating used in summer Is there a combi boiler

Storage

Is hot water storage indoors or in group heating scheme? **Storage Type** Integrated thermal store and gas-fired CPSU **Storage Volume (l)** 260 **Heat Pump Type of DHW *** Integral Hot Water Storage

Is manufacturers declared loss available **Make and Model** Hitachi RWD-3.ONRWE-260S **Declared Loss (kWh/day)** 1.85

Insulation Type

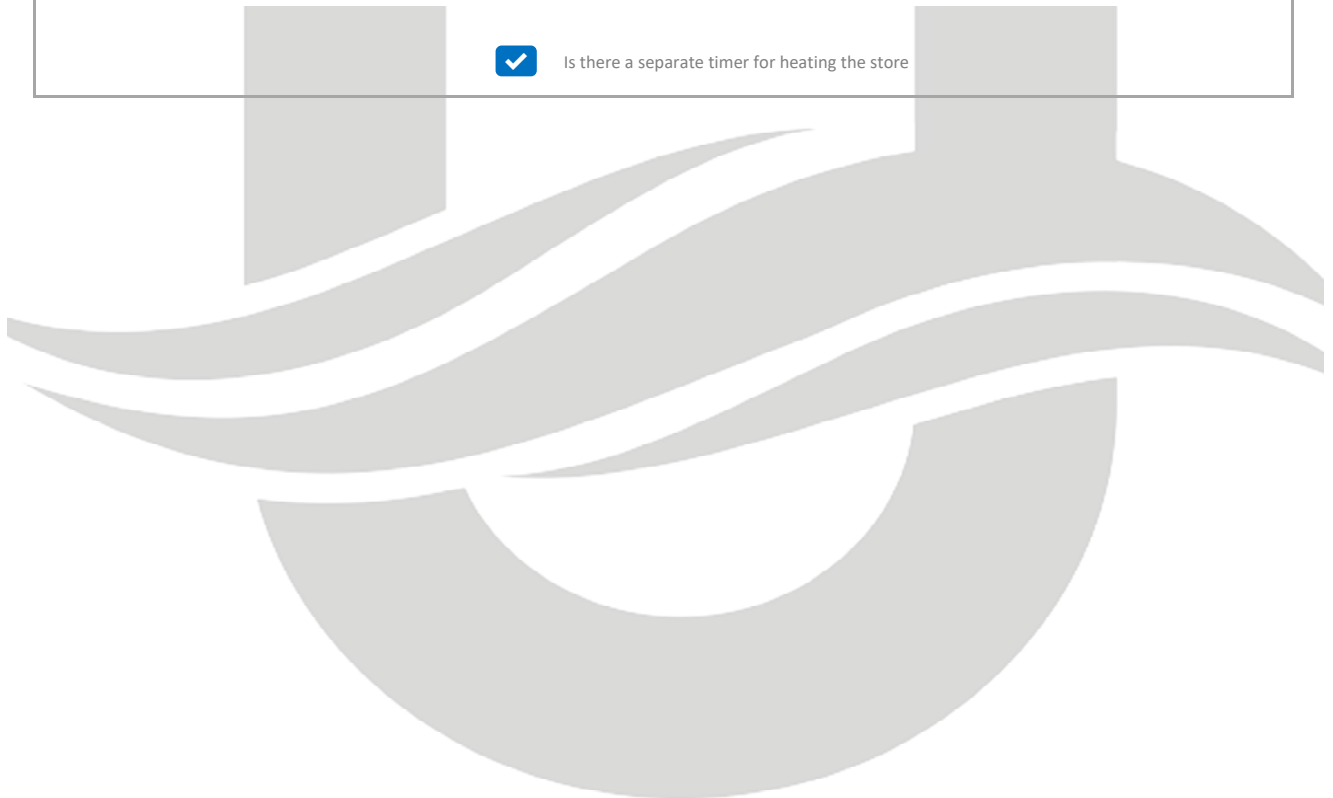
Factory Insulated

Insulation Thickness (mm)

Primary Circuit Loss Type

None

Is there a separate timer for heating the store



Subject: Performance data for YUTAKI S COMBI: air to water heat pump with integrated tank.

Hereby we confirm that the below values are HP Keymark certified and compliant with Ecodesign directive 2009/125/EC (813/2013) and Energy labelling directive 2010/30/EU (811/2013)

Heating & Cooling Performance

EN-14511:2018

| HP | | | | 2.0 HP | 2.5 HP | 3.0 HP |
|--------------------|------------|----------------------|------|---------------------------------------|---------------------------------------|---------------------------------------|
| Outdoor unit model | | | | RAS-2WHVRP | RAS-2.5WHVRP | RAS-3WHVRP |
| Indoor unit model | | | | RWD-2.0NRW(S) E-(200/260)S(-K)(-W) | RWD-2.5NRW(S) E-(200/260)S(-K)(-W) | RWD-3.0NRW(S) E-(200/260)S(-K)(-W) |
| OAT (DB/WB) | WIT / WOT | - | Unit | Heating operation | | |
| 7 / 6 °C | 30 / 35 °C | CAP (Min./Nom./Max.) | kW | 1.85 / 4.30 / 6.50 | 1.85 / 6.00 / 8.60 | 2.1 / 8.00 / 11.0 |
| | | COP (Nom.) | - | 5.25 | 4.80 | 4.60 |
| | 47 / 55 °C | CAP (Nom./Max.) | kW | 4.30 / 6.00 | 6.00 / 7.50 | 8.00 / 9.50 |
| | | COP (Nom.) | - | 3.00 | 2.85 | 2.80 |
| -7 / -8 °C | 30 / 35 °C | CAP (Nom./Max.) | kW | 4.50 / 5.30 | 5.30 / 6.20 | 5.80 / 7.50 |
| | | COP (Nom.) | - | 2.8 | 2.70 | 2.70 |
| | 47 / 55 °C | CAP (Nom./Max.) | kW | 4.00 / 4.20 | 4.70 / 5.00 | 5.00 / 5.50 |
| | | COP (Nom.) | - | 2.00 | 1.80 | 1.75 |

| OAT (DB/WB) | WIT / WOT | - | Unit | Cooling operation (Using cooling kit accessory) | | |
|----------------|------------|---------------|------|--|-------------|-------------|
| 35 / -- °C | 12 / 7 °C | CAP (Nom/Max) | kW | 4.00 / 5.00 | 5.30 / 6.00 | 6.50 / 7.00 |
| | | EER (Nom.) | - | 4.00 | 3.60 | 3.35 |
| | 23 / 18 °C | CAP (Nom/Max) | kW | 5.50 / 6.40 | 6.30 / 7.70 | 7.00 / 9.00 |
| | | EER (Nom.) | - | 5.40 | 5.30 | 5.00 |

Johnson Controls-Hitachi Air Conditioning Spain, S.A.U.

Ronda Shimizu 1, P. I. Can Torrella
08233 Vacarisses, Barcelona (Spain)

EN-14825:2016

| Model | | HP | 2.0 HP | | 2.5 HP | | 3.0 HP | |
|---|------------------------------|--------------|-----------------------------------|-------------|-----------------------------------|-------------|-----------------------------------|-------------|
| | | Outdoor unit | RAS-2WHVRP | | RAS-2.5WHVRP | | RAS-3WHVRP | |
| | | Indoor unit | RWD-2.0NRW(S)E-(200/260)S(-K)(-W) | | RWD-2.5NRW(S)E-(200/260)S(-K)(-W) | | RWD-3.0NRW(S)E-(200/260)S(-K)(-W) | |
| Water outlet temperature | | | 35°C | 55°C | 35°C | 55°C | 35°C | 55°C |
| Product description | Air to water heat pump | - | Yes | | | | | |
| | Heat pump combination heater | - | No | | | | | |
| | Low temperature heat pump | - | No | | | | | |
| | Complementary heater | - | Yes | | | | | |
| Design capacity (P _{DESIGN}) | | kW | 4.0 | 4.0 | 6.0 | 5.0 | 7.0 | 6.0 |
| Nominal energy efficiency (η _g) | | % | 181(186) | 133 (136) | 177 (180) | 127 (128) | 177(179) | 125 (127) |
| Nominal energy class | | - | A+++ | A++ | A+++ | A++ | A+++ | A++ |
| Data for Packaged Fiche: | | | | | | | | |
| Energy efficiency with OTC control (η _g) (*) | | % | 183(188) | 135(138) | 179 (182) | 129(130) | 179(181) | 127 (129) |
| Energy class with OTC control | | - | A+++ | A++ | A+++ | A++ | A+++ | A++ |
| Energy efficiency with thermostats/sensors (η _g) (*) | | % | 185(190) | 137(140) | 181 (184) | 131(132) | 181(183) | 129 (131) |
| Energy class with thermostats | | - | A+++ | A++ | A+++ | A++ | A+++ | A++ |
| Supplementary capacity (P _{SUP}) | | kW | 0.0 | 0.9 | 0.25 | 1.1 | 0.6 | 1.5 |
| Type of energy used | | - | Electricity | | | | | |
| Declared capacity (P _{dh}) and coefficient of performance (COP _d) at partial load under the following outdoor temperatures: | | | | | | | | |
| Outdoor temperature (T _j) = -7°C | P _{dh} | kW | 3.54 | 3.50 | 5.10 | 4.42 | 5.90 | 5.10 |
| | COP _d | - | 3.20 | 2.13 | 2.70 | 1.85 | 2.65 | 1.84 |
| Outdoor temperature (T _j) = +2°C | P _{dh} | kW | 2.35 | 2.10 | 3.10 | 2.69 | 3.59 | 3.10 |
| | COP _d | - | 4.80 | 3.35 | 4.60 | 3.30 | 4.30 | 3.10 |
| Outdoor temperature (T _j) = +7°C | P _{dh} | kW | 3.00 | 2.43 | 3.00 | 2.43 | 3.20 | 2.00 |
| | COP _d | - | 6.20 | 5.15 | 6.20 | 4.60 | 7.00 | 4.65 |
| Outdoor temperature (T _j) = +12°C | P _{dh} | kW | 3.05 | 2.80 | 3.05 | 2.80 | 3.50 | 2.20 |
| | COP _d | - | 8.30 | 6.80 | 8.35 | 6.35 | 9.70 | 6.55 |
| Outdoor temperature (T _j) = Bivalent temperature (T _{bv}) | P _{dh} | kW | 3.54 | 3.50 | 5.10 | 4.42 | 5.90 | 5.10 |
| | COP _d | - | 3.20 | 2.13 | 2.70 | 1.85 | 2.65 | 1.84 |
| Outdoor temperature (T _j) = Limit operation temperature (TOL) | P _{dh} | kW | 4.00 | 3.10 | 5.30 | 3.90 | 6.40 | 5.00 |
| | COP _d | - | 2.75 | 1.90 | 2.50 | 1.70 | 2.30 | 1.50 |
| Bivalent temperature (T _{bv}) | | °C | -7 | -7 | -7 | -7 | -7 | -7 |
| Limit operation temperature (TOL) | | °C | -10 | -10 | -10 | -10 | -10 | -10 |
| Water limit operation temperature (WTOL) | | °C | 55 | 55 | 55 | 55 | 55 | 55 |
| Degradation coefficient (C _{dh}) | | - | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| Annual energy consumption (Q _{HE}) | | kW·h | 1798 (1754) | 2401 (2357) | 2652 (2608) | 3186 (3143) | 3068 (3024) | 3724 (3680) |

Johnson Controls-Hitachi Air Conditioning Spain, S.A.U.

Ronda Shimizu 1, P. I. Can Torrella
08233 Vacarisses, Barcelona (Spain)

Domestic Hot Water (DHW) Performance

EN-16147:2017

RAS-(2-3)WHVRP + RWD-(2.0-3.0)NRW(S)E-(200/260)S(-K)(-W)

| | Symbol | Unit | RWD-2/2.5/3.0NRW(S)E-200S(-K)(-W) | RWD-2/2.5/3.0NRW(S)E-260S(-K)(-W) |
|-------------------------------------|---------------|-------|-----------------------------------|-----------------------------------|
| Declared load profile | - | - | L | XL |
| Efficiency | η_{wh} | % | 132 | 136 |
| Energy Class | - | - | A+ | A+ |
| Coefficient of performance | COP_{DHW} | - | 3.30 | 3.40 |
| Heating up time | t_h | H:min | 1:43 | 2.20 |
| Standby power input | P_{es} | W | 37 | 37 |
| Reference hot water temperature | Θ_{WH} | °C | 54.0 | 54.0 |
| Volume of DHW accounted for in test | V_{40} | L | 263 | 350 |
| Nominal tank volume | - | L | 200 | 260 |
| Net tank volume | - | L | 190 | 250 |

Domestic Hot Water (DHW) Standing Heat Loss

(NOT INCLUDED) in HP Keymark certified, Ecodesign directive 2009/125/EC (813/2013) and Energy labelling directive 2010/30/EU (811/2013))

EN-12897:2017

| | Symbol | Unit | RWD-2/2.5/3.0NRW(S)E-200S(-K)(-W) | RWD-2/2.5/3.0NRW(S)E-260S(-K)(-W) |
|--------------------|--------|---------|-----------------------------------|-----------------------------------|
| Stand-by heat loss | - | kWh/day | 1.75 | 1.85 |

Within the policy of continuous improvement of its products, Johnson Controls Hitachi Air Conditioning Spain reserves the right to make changes at any time without prior notification and without being compelled to introducing them into products subsequently sold. This document may therefore have been subject to amendments during the life of the product.

Date and signature of the official representative



Mr. Toni Badia – General Manager

28/08/2020

Johnson Controls-Hitachi Air Conditioning Spain, S.A.U.

Ronda Shimizu 1, P. I. Can Torrella
08233 Vacarisses, Barcelona (Spain)