DEAP 4.2 INPUTS

Add New Item To Library

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BASIC PROPERTIES | HEAT PUMP TEST DATA

Item Type *	Item Name *	Keywords *
Heat Source	S-Combi 14kW 260L	Hitachi S-Combi
Manufacturer *		Model *
Hitachi		RAS-5.0WHVNPE & RWD-5.0NWE-260S
Heating Source Type *		Heat Pump Type *
Heat Pumps		Air to Water
Space Heating Standard *		Water Heating Standard *
I.S. EN 14825		I.S. EN 16147
Season Space Heating Efficiencey, ηs[%] *		Water Heating Effiencey, ηwh [%] *
133		134

Temperature Control (Capacity Control) *
Variable Outlet

☐ Integrated Immersion

☐ Flow Temperature >=[60/65°C]

TOL *	WTOL *
-10	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)	12.00	7.30	4.70	3.50	12.10
Coefficient of Performance (KW/KW)	2.55	4.70	5.70	6.00	2.50

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)	10.25	6.24	4.01	3.50	9.00
Coefficient of Performance (KW/KW)	1.70	3.60	4.60	5.50	1.60

Heating System Test Data: I.S. EN16147

Source of Data *: Water Heating Efficiency

Coefficient of Performance (KW/KW):

Water Heating Efficiency, ηwh [%]: 134

Reference Hot Water Temperature (°C) *: 54

Capacity of Heat Pump (kW) *: 12

Declared Load Profile *: XL

Standby Heat Loss [kWh/day] *: 1.85

Voume of DHW accounted for in test (Litre) *: 350

CANCEL SAVE

Edit Primary Heat Source

Product Details

Type	Heat Pumps
Heat Pump Type	Air to Water
Manufacturer	Hitachi
Model	RAS-5.0WHVNPE & RWD-5.0NWE-260S
Seasonal Space Heating Effciency, ηs	133

This is the Ecodesign Seasonal Space Heating Efficiency, ηs. When the survey is completed, the efficiency will be updated to reflect the performance of the heat pump in this dwelling.

Eff. Adj. Factor 1

VIEW DETAILS IN LIBRARY

Survey Details

Heat % * 100

Fuel Type Electricty

Heats Water

Design Flow Temperature (°C) * As Required

Daily Operation (h) * 24

Backup Space Heater Fuel Electricity

Back Up Space Heater Efficiency (%) * 100

Backup Water Heater Fuel Electricity

Back Up Water Heater Efficiency (%) * 100

CANCEL SAVE

Hot Water Tab

Options & Storage | Solar | Heat Source

Options

- [x] Distribution Losses
- [x] Storage Losses
- [ ] Is supplementary electric water heating used in summer
- [ ] Is there a combi boiler

Storage

- [x] Is hot water storage indoors or in group heating scheme?

Storage Type: Integrated thernal store and gas-fired CPSU

Storage Volume (l): 260

Heat Pump Type of DHW *: Integral Hot Water Storage

- [x] Is manufacturers declared loss available

Make and Model: Hitachi RWD-5.0NWE-260S

Declared Loss (kWh/day): 1.85

Insulation Type: Factory Insulated

Insulation Thickness (mm):

Primary Circuit Loss Type: None

- [x] Is there a separate timer for heating the store

Johnson Controls-Hitachi Air Conditioning Spain

Date 28-08-2020

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	4.0 HP	5.0 HP	6.0 HP
Outdoor unit model				RAS-2 WHVNP	RAS-2.5 WHVNP	RAS-3 WHVNP	RAS-4 WH(V)NPE	RAS-5 WH(V)NPE	RAS-6 WH(V)NPE
Indoor unit model				RWD-2.0NW(S) E-(200/260) S(-K)(-W)	RWD-2.5NW(S) E-(200/260) S(-K)(-W)	RWD-3.0NW(S) E-(200/260) S(-K)(-W)	RWD-4.0NW(S) E-(200/260) S(-K)(-W)	RWD-5.0NW(S) E-(200/260) S(-K)(-W)	RWD-6.0NW(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 /4.3/7.0	1.95 /6.0/9.0	2.1/ 7.5/11.0	4.3 /11.0/15.2	4.8 /14.0/16.7	5.5 /16.0/17.8
		COP (Nom.)	-	5.25	4.80	4.55	5.00	4.71	4.57
	40 / 45 °C	CAP (Nom./Max.)	kW	4.3/6.2	6.0/9.0	7.5/10.0	11.0/14.1	14.0/15.7	16.0/17.3
		COP (Nom.)	-	3.90	3.59	3.50	3.98	3.61	3.40
	47 / 55 °C	CAP (Nom./Max.)	kW	4.3/6.0	6.0/8.0	7.5/9.2	11.0/13.5	14.0/15.2	16.0/17.0
		COP (Nom.)	-	3.0	2.89	2.57	3.00	2.80	2.50
2 / 1 °C	30 / 35 °C	CAP (Nom./Max.)	kW	3.5/5.5	4.5/7.0	5.5/8.9	9.5/12.8	10.5/13.9	11.1/15.0
		COP (Nom.)	-	4.10	3.65	3.53	3.61	3.55	3.41
-7 / -8 °C	30 / 35 °C	CAP (Nom./Max.)	kW	4.3/4.7	5.3/5.7	5.8/6.7	9.7/10.6	11.5/12.0	12.0/13.0
		COP (Nom.)	-	2.85	2.60	2.57	2.74	2.65	2.57
	40 / 45 °C	CAP (Nom./Max.)	kW	4.3/4.6	5.0/5.5	6.0/6.4	10.0/10.0	11.0/11.6	11.5/12.5
		COP (Nom.)	-	2.45	2.25	2.25	2.45	2.25	2.15
	47 / 55 °C	CAP (Nom./Max.)	kW	4.0/4.2	4.6/5.0	5.0/5.5	8.7/9.7	9.7/11.2	10.5/12.0
		COP (Nom.)	-	1.93	1.82	1.60	1.78	1.85	1.75

OAT (DB/WB)	WIT / WOT	-	Unit	Cooling operation (Using cooling kit accessory)					
35 / -- °C	12 / 7 °C	CAP (Nom/Max)	kW	3.8/4.9	5.0/5.8	6.0/7.0	7.2/11.8	9.5/12.6	10.5/13.7
		EER (Nom.)	-	3.12	3.15	2.75	3.54	3.54	3.31
	23 / 18 °C	CAP (Nom/Max)	kW	4.1/6.1	5.5/7.4	6.0/8.5	10.4/15.0	12.9/16.0	13.5/17.5
		EER (Nom.)	-	3.81	3.81	3.81	4.50	4.02	3.81

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HITACHI
Air conditioning solutions

EN-14825:2016

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

Model				HP	2.0 HP		2.5 HP		3.0 HP	
				Outdoor unit	RAS-2WHVNP		RAS-2.5WHVNP		RAS-3WHVNP	
				Indoor unit	RWD-2.0NW(S)E-(200/260)S(-K)(-W)		RWD-2.5NW(S)E-(200/260)S(-K)(-W)		RWD-3.0NW(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_s)			%		189 (194)	137 (140)	177 (180)	130 (132)	165 (167)	125 (127)
Nominal energy class			-		A+++	A++	A+++	A++	A++	A++
Data for Packaged Fiche:										
	Energy efficiency with OTC control (η_s) (*)		%		191 (196)	139 (142)	179 (182)	132 (134)	167 (169)	127 (129)
	Energy class with OTC control		-		A+++	A++	A+++	A++	A++	A++
	Energy efficiency with thermostats/sensors (η_s) (*)		%		193 (198)	141 (144)	181 (184)	134 (136)	169 (171)	129 (131)
	Energy class with thermostats		-		A+++	A++	A+++	A++	A++	A++
Supplementary capacity (P_{SUP})			kW		0.0	0.9	0.3	1.1	0.6	1.5
Type of energy used			-		Electricity					
Declared capacity (Pdh) and coefficient of performance (COP_d) at partial load under the following outdoor temperatures:										
	Outdoor temperature (Tj) = -7°C	Pdh	kW		3.54	3.50	4.95	4.42	5.90	5.10
		COP_d	-		3.20	2.30	2.70	1.85	2.50	1.84
	Outdoor temperature (Tj) = +2°C	Pdh	kW		2.15	2.10	3.01	2.69	3.59	3.10
		COP_d	-		5.20	3.73	4.60	3.45	4.40	3.20
	Outdoor temperature (Tj) = +7°C	Pdh	kW		1.70	1.60	1.90	1.84	2.31	2.00
		COP_d	-		6.05	4.40	6.00	4.20	5.35	4.45
	Outdoor temperature (Tj) = +12°C	Pdh	kW		1.75	1.60	1.80	2.06	2.10	2.30
		COP_d	-		6.25	5.00	7.20	6.90	6.15	5.96
	Outdoor temperature (Tj) = Bivalent temperature (T_{biv})	Pdh	kW		3.54	3.50	4.95	4.42	5.90	5.10
		COP_d	-		3.20	2.30	2.70	1.85	2.50	1.84
	Outdoor temperature (Tj) = Limit operation temperature (TOL)	Pdh	kW		4.00	3.10	5.30	3.90	6.40	4.30
		COP_d	-		2.75	1.90	2.50	1.80	2.30	1.65
Bivalent temperature (T_{biv})			°C		-7	-7	-7	-7	-7	-7
Limit operation temperature (TOL)			°C		-10	-10	-10	-15	-10	-15
Water limit operation temperature (WTOL)			°C		55	55	55	55	55	55
Degradation coefficient (Cdh)			-		0.9	0.9	0.9	0.9	0.9	0.9
Annual energy consumption (Q_{HE})			kW·h		1719 (1675)	2358 (2314)	2569 (2525)	3114 (3070)	3286 (3242)	3724 (3690)

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Air conditioning solutions

RAS-(4-6)WHVNPE + RWD-(4.0-6.0)NW(S)E-(200/260)S(-K)(-W)

Model			HP	4.0 HP		5.0 HP		6.0 HP	
			Outdoor unit	RAS-4WHVNPE		RAS-5WHVNPE		RAS-6WHVNPE	
			Indoor unit	RWD-4.0NW(S)E-(200/260)S(-K)(-W)		RWD-5.0NW(S)E-(200/260)S(-K)(-W)		RWD-6.0NW(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	11.0	10.0	14.0	12.0	16.0	14.0
Nominal energy efficiency (η_s)			%	187 (189)	136 (137)	175 (176)	133 (134)	153 (153)	125 (126)
Nominal energy class			-	A+++	A++	A+++	A++	A++	A++
Data for Packaged Fiche:									
	Energy efficiency with OTC control (η_s) (*)		%	189 (191)	138 (139)	177 (178)	135 (136)	155 (155)	127 (128)
	Energy class with OTC control		-	A+++	A++	A+++	A++	A++	A++
	Energy efficiency with thermostats/sensors (η_s) (*)		%	191 (193)	140 (141)	179 (180)	137 (138)	157 (157)	129 (130)
	Energy class with thermostats		-	A+++	A++	A+++	A++	A++	A++
Supplementary capacity (P_{SUP})			kW	0.5	2.3	1.9	2.6	1.9	3.1
Type of energy used			-	Electricity					
Declared capacity (Pdh) and coefficient of performance (COP_d) at partial load under the following outdoor temperatures:									
	Outdoor temperature (Tj) = -7°C	Pdh	kW	9.60	8.60	12.00	10.25	13.80	11.20
		COP_d	-	2.74	1.80	2.55	1.70	2.40	1.60
	Outdoor temperature (Tj) = +2°C	Pdh	kW	5.84	5.23	7.30	6.24	8.40	6.82
		COP_d	-	5.20	3.60	4.70	3.60	3.90	3.35
	Outdoor temperature (Tj) = +7°C	Pdh	kW	3.76	3.52	4.70	4.01	5.40	4.38
		COP_d	-	5.80	4.80	5.70	4.60	5.00	4.35
	Outdoor temperature (Tj) = +12°C	Pdh	kW	3.70	3.60	3.50	3.50	3.50	3.60
		COP_d	-	6.40	5.80	6.00	5.50	6.00	5.50
	Outdoor temperature (Tj) = Bivalent temperature (T_{biv})	Pdh	kW	9.60	8.60	12.00	10.25	13.80	11.20
		COP_d	-	2.74	1.80	2.55	1.70	2.40	1.60
	Outdoor temperature (Tj) = Limit operation temperature (TOL)	Pdh	kW	10.50	7.40	12.10	9.00	14.10	10.5
		COP_d	-	2.65	1.70	2.50	1.60	2.30	1.40
Bivalent temperature (T_{biv})			°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 (Cdh)			-	0.9	0.9	0.9	0.9	0.9	0.9
Annual energy consumption (Q_{HE})			kW·h	4714 (4666)	5815 (5767)	6313 (6265)	7066 (7018)	8287 (8239)	8780 (8732)

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RAS-(4-6)WHNPE + RWD-(4.0-6.0)NW(S)E-(200/260)S(-K)(-W)

Model			HP	4.0 HP		5.0 HP		6.0 HP	
			Outdoor unit	RAS-4WHNPE		RAS-5WHNPE		RAS-6WHNPE	
			Indoor unit	RWD-4.0NW(S)E-(200/260)S(-K)(-W)		RWD-5.0NW(S)E-(200/260)S(-K)(-W)		RWD-6.0NW(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	11.0	10.0	14.0	12.0	16.0	14.0
Nominal energy efficiency (η_s)			%	186(189)	135(137)	174(176)	133(134)	152(153)	125(126)
Nominal energy class			-	A+++	A++	A++ (A+++)	A++	A++	A++
Data for Packaged Fiche:									
	Energy efficiency with OTC control (η_s) (*)		%	188(191)	137(139)	176(178)	135(136)	154(155)	127(128)
	Energy class with OTC control		-	A+++	A++	A+++	A++	A++	A++
	Energy efficiency with thermostats/sensors (η_s) (*)		%	190(193)	139(141)	178(180)	137(138)	156(157)	129(130)
	Energy class with thermostats		-	A+++	A++	A+++	A++	A++	A++
Supplementary capacity (P_{SUP})			kW	0.5	2.3	1.9	2.6	1.9	3.1
Type of energy used			-	Electricity					
Declared capacity (Pdh) and coefficient of performance (COP_d) at partial load under the following outdoor temperatures:									
	Outdoor temperature (Tj) = -7°C	Pdh	kW	9.60	8.60	12.00	10.25	13.80	11.20
		COP_d	-	2.74	1.80	2.55	1.70	2.40	1.60
	Outdoor temperature (Tj) = +2°C	Pdh	kW	5.84	5.23	7.30	6.24	8.40	6.82
		COP_d	-	5.20	3.60	4.70	3.60	3.90	3.35
	Outdoor temperature (Tj) = +7°C	Pdh	kW	3.76	3.52	4.70	4.01	5.40	4.38
		COP_d	-	5.80	4.80	5.70	4.60	5.00	4.35
	Outdoor temperature (Tj) = +12°C	Pdh	kW	3.70	3.60	3.50	3.50	3.50	3.60
		COP_d	-	6.40	5.80	6.00	5.50	6.00	5.50
	Outdoor temperature (Tj) = Bivalent temperature (T_{biv})	Pdh	kW	9.60	8.60	12.00	10.25	13.80	11.20
		COP_d	-	2.74	1.80	2.55	1.70	2.40	1.60
	Outdoor temperature (Tj) = Limit operation temperature (TOL)	Pdh	kW	10.50	7.40	12.10	9.00	14.10	10.50
		COP_d	-	2.65	1.70	2.50	1.60	2.30	1.40
Bivalent temperature (T_{biv})			°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 (Cdh)			-	0.9	0.9	0.9	0.9	0.9	0.9
Annual energy consumption (Q_{HE})			kW·h	4736 (4666)	5837 (5767)	6335 (6265)	7088 (7018)	8309 (8239)	8802 (8732)

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Domestic Hot Water (DHW) Performance

EN-16147:2017

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

	Symbol	Unit	RWD-2/2.5/3.0NW(S)E-200S(-K)(-W)	RWD-2/2.5/3.0NW(S)E-260S(-K)(-W)
Declared load profile	-	-	L	XL
Efficiency	ηwh	%	132	136
Energy Class	-	-	A+	A+
Coefficient of performance	COP $_{DHW}$	-	3.30	3.40
Heating up time	t_h	H:min	1:43	2.10
Standby power input	P_{es}	W	37	41
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

RAS-(4-6)WH(V)NPE + RWD-(4.0-6.0)NW(S)E-(200/260)S(-K)(-W)

	Symbol	Unit	RWD-4.0NW(S)E-200S(-K)(-W) 1~ (3~)	RWD-4.0NW(S)E-260S(-K)(-W) 1~ (3~)
Declared load profile	-	-	L	XL
Efficiency	ηwh	%	130	134
Energy Class	-	-	A+	A+
Coefficient of performance	COP $_{DHW}$	-	3.25	3.35
Heating up time	t_h	H:min	1:23	1:44
Standby power input	P_{es}	W	42 (49)	44 (51)
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

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	Symbol	Unit	RWD-5.0NW(S)E-200S(-K)(-W) 1~ (3~)	RWD-5.0NW(S)E-260S(-K)(-W) 1~ (3~)
Declared load profile	-	-	L	XL
Efficiency	ηwh	%	130	134
Energy Class	-	-	A+	A+
Coefficient of performance	COP DHW	-	3.25	3.35
Heating up time	t_h	H:min	1:10	1:25
Standby power input	P_{es}	W	42 (49)	44 (51)
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

	Symbol	Unit	RWD-6.0NW(S)E-200S(-K)(-W) 1~ (3~)	RWD-6.0NW(S)E-260S(-K)(-W) 1~ (3~)
Declared load profile	-	-	L	XL
Efficiency	ηwh	%	130	134
Energy Class	-	-	A+	A+
Coefficient of performance	COP DHW	-	3.25	3.35
Heating up time	t_h	H:min	1:10	1:25
Standby power input	P_{es}	W	42 (49)	44 (51)
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

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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

RWD-(2.0-6.0)NW(S)E-(200/260)S(-K)(-W)

	Symbol	Unit	RWD-2.0~6.0NW(S)E-200S(-K)(-W)	RWD-2.0~6.0NW(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

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