

### 3. Specifications

#### 3.1 WH-ADC0309K3E5 WH-UDZ03KE5

Item		Unit	Outdoor Unit		
Performance Test Condition			EN 14511		
			EN 14825		
Cooling Capacity	Condition (Ambient/Water)		A35W7		
	kW		3.20		
	BTU/h		10900		
	kcal/h		2750		
Cooling EER	W/W		3.52		
	kcal/hW		3.02		
Heating Capacity	Condition (Ambient/Water)		A7W35	A2W35	
	kW		3.20	3.20	
	BTU/h		10900	10900	
	kcal/h		2750	2750	
Heating COP	W/W		5.33	3.64	
	kcal/hW		4.58	3.13	
Heating Erp	Low Temperature Application (W35)		Warmer	Average	Colder
	Application	Climate			
	Pdesign	kW	4.0	4.0	3.0
	Tbivalent/TOL	°C	2 / 2	-10 / -10	-20 / -22
	SCOP/ns	(W/W)%	6.20 / 245	5.07 / 200	4.00 / 157
	Annual Consumption	kWh	862	1631	1848
	Class		A+++	A+++	A++
	Medium Temperature Application (W55)		Warmer	Average	Colder
	Application	Climate			
	Pdesign	kW	4.0	3.0	2.0
	Tbivalent/TOL	°C	2 / 2	-10 / -10	-20 / -22
	SCOP/ns	(W/W)%	4.20 / 165	3.47 / 136	2.83 / 110
	Annual Consumption	kWh	1274	1788	1740
	Class		A+++	A++	A+
	DHW		Warmer	Average	Colder
	Application	Climate			
	COP/nwh	(W/W)%	3.86 / 154	3.20 / 128	2.48 / 99
	AEC	kWh	654	790	1023
Noise Level	Condition (Ambient/Water)		A35W7	A7W35	A2W35
	dB (A)		Cooling: 45***	Heating: 44***	Heating: 44***
	Power Level dB		Cooling: 61***	Heating: 60*** Heating: 55****	Heating: 60*** Heating: 55***
Air Flow	m <sup>3</sup> /min (ft <sup>3</sup> /min)		Cooling: 33.9 (1200) Heating: 28.9 (1020)		
Refrigeration Control Device			Expansion Valve		
Refrigeration Oil	cm <sup>3</sup>		FW50S (450)		
Refrigerant	kg (oz)		R32, 0.90 (31.8) (Pre-charged) R32, 1.20 (42.4) (Maximum)		
F-GAS	GWP		675		
	CO <sub>2</sub> eq (ton) (Precharged/Maximum)		0.608 / 0.810		

Item		Unit	Outdoor Unit		
Dimension	Height	mm (inch)	622 (24-1/2)		
	Width	mm (inch)	824 (32-15/32)		
	Depth	mm (inch)	298 (11-24/32)		
Net Weight		kg (lbs)	37 (82)		
Pipe Diameter	Liquid	mm (inch)	6.35 (1/4)		
	Gas	mm (inch)	12.70 (1/2)		
Standard Length		m (ft)	7 (23.0)		
Pipe Length Range		m (ft)	3 (9.8) ~ 25 (82.0)		
I/D & O/D Height Difference		m (ft)	20 (65.6)		
Additional Gas Amount		g/m (oz/ft)	20 (0.2)		
Refrigeration Charge Less		m (ft)	10 (32.8)		
Compressor	Type		Hermetic Motor		
	Motor Type		Brushless (6-poles)		
	Rated Output	kW	0.90		
Fan	Type		Propeller Fan		
	Material		PP		
	Motor Type		DC (8-poles)		
	Input Power	W	20 (Heating) / 23 (Cooling)		
	Output Power	W	40		
	Fan Speed	rpm	Cooling: 840 Heating: 720		
Heat Exchanger	Fin material		Aluminium (Pre Coat)		
	Fin Type		Corrugated Fin		
	Row × Stage × FPI		2 × 28 × 19		
	Size (W × H × L)	mm	36.4 × 588 × 827.7:856.3		
Power Source (Phase, Voltage, Cycle)		∅	Single		
		V	230		
		Hz	50		
Input Power	Condition (Ambient/Water)		A35W7	A7W35	A2W35
	kW		Cooling: 0.91	Heating: 0.60	Heating: 0.88
Maximum Input Power For Heatpump System		kW	2.59		
Power Supply 1 : Phase (∅) / Max. Current (A) / Max. Input Power (W)			1∅ / 12.0 / 2.59k		
Power Supply 2 : Phase (∅) / Max. Current (A) / Max. Input Power (W)			1∅ / 13.0 / 3.00k		
Power Supply 3 : Phase (∅) / Max. Current (A) / Max. Input Power (W)			- / - / -		
Starting Current		A	2.9		
Running Current	Condition (Ambient/Water)		A35W7	A7W35	A2W35
	A		Cooling: 4.3	Heating: 2.9	Heating: 4.2
Maximum Current For Heatpump System		A	12.0		
Power Factor Power factor means total figure of compressor and outdoor fan motor.	Condition (Ambient/Water)		A35W7	A7W35	A2W35
	%		Cooling: 92	Heating: 90	Heating: 91
Power Cord	Number of core		-		
	Length	m (ft)	-		
Thermostat			Electronic Control		
Protection Device			Electronic Control		

Item		Unit	Indoor Unit		
Performance Test Condition		EN 14511			
		EN 14825			
Operation Range	Outdoor Ambient	°C (min./max.)	Cooling: 10 / 43 Heating (Tank): -20 / 35 Heating (Circuit): -20 / 35		
	Water Outlet	°C (min./max.)	Cooling: 5 / 20 Heating (Tank): - / 65** Heating (Circuit): 20 / 55 (Below Ambient -15 °C) ** Heating (Circuit): 20 / 60 (Above Ambient -10 °C) **		
Internal Pressure Differential		kPa	Cooling: 5.0 Heating: 5.0		
Noise Level		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		dB (A)	Cooling: 28***	Heating: 28***	Heating: 28***
		Power Level dB	Cooling: 41***	Heating: 41***	Heating: 41***
Dimension	Depth	mm (inch)	602 (23-45/64)		
	Width	mm (inch)	599 (23-37/64)		
	Height	mm (inch)	1642 (64-41/64)		
Net Weight		kg (lbs)	100 (221)		
Refrigerant Pipe Diameter	Liquid	mm (inch)	6.35 (1/4)		
	Gas	mm (inch)	12.70 (1/2)		
Water Pipe Diameter	Room	mm (inch)	31 (1-1/4)		
	Shower	mm (inch)	19 (3/4)		
Water Drain Hose Inner Diameter		mm (inch)	12.00 (17/36)		
Pump	Motor Type		Brushless DC Motor		
	No. of Speed		7 (Software Selection)		
	Input Power	W	145		
Hot Water Coil	Type		Brazen Plate		
	No. of Plates		36		
	Size (W x H x L)	mm	68 × 333 × 121		
	Water Flow Rate	l/min (m <sup>3</sup> /h)	Cooling: 9.2 (0.6) Heating: 9.2 (0.6)		
Pressure Relief Valve Water Circuit		kPa	Open: 300, Close: 210 and below		
Flow Sensor	Type		Vortex (Piezoelectric sensor)		
	Measuring range	l/min	5 ~ 60		
Pressure Release Valve		kPa	Open: 800, Close: 640 and below		
Protection Device		A	Earth Leakage Circuit Breaker (40)		
Expansion Vessel	Volume	l	10		
	MWP	bar	3		
Capacity of Integrated Electric Heater / OLP TEMP		kW/°C	3.00 / 80		
Tank Volume (Spec / Nett)		L	200 / 185		
Max. Tank Water Set Temperature		°C	65		
Tank Coil Surface		m <sup>2</sup>	1.8		
Maximum Working Pressure	Heat/Cool	Bar	3.0		
	Tank Circuit	Bar	10.0		
Operating Pressure	Tank Unit	Bar	3.5		
	Expansion Relief Valve	Bar	8.0		
Expansion Vessel Pre-charge Pressure (DHW Circuit)		Bar	3.5		
Pressure Reducing Valve Set Pressure (DHW Circuit)		Bar	3.5		

Item		Unit	Indoor Unit
Pressure Vessel	Material		EN-1.4521
	Volume	L	185
	Design Pressure	Bar	10
Heat Exchanger	Material		EN-1.4521
	Diameter	mm	22
	Thickness	mm	0.8
	Surface Area	m <sup>2</sup>	1.8
	Total Length	m	25
DHW Tank	Total Corrosion ion (Chloride + Sulphate + Nitric)	mg/L	< 150
	Conductivity @ Water Tank Water Temperature < 60°C	μS/cm	< 1250
	Conductivity @ Water Tank Water Temperature < 65°C	μS/cm	< 1200
	Saturation Index (LSI) @ 20°C		> -4.0 / < 0.4
	PH		6.5 - 8.5

**Note:**

- In case it is necessary to indicate the air flow volume in (l/s), the value in (m<sup>3</sup>/min.) shall be multiplied by 16.7 and rounded down the decimal point.
- If the EUROVENT Certified models can be operated under the “extra-low” temperature condition, -7°C DB and -8°C WB temperature with rated voltage 230V shall be used.
- Capacity is measured at outdoor temperature 7°C DB and 6°C WB with controlled water inlet 30°C and water outlet 35°C (EN 14511-2)
- Flowrate indicated are based on nominal capacity adjustment of leaving water temperature (LWT) 35°C and ΔT=5°C.
- EER and COP classification is at 230V only in accordance with EU directive 2003/32/EC.
- \*<sup>3</sup> Above 55°C, only possible with backup heater operation.
- \*<sup>4</sup> Between outdoor ambient -10°C and -15°C, the water outlet temperature gradually decreases from 60°C to 55°C.
- \*\*\* The sound pressure and sound power level is measured with distance 1.0m from the unit and height at 1.5m. (Test carry out for cooling at ambient 35°C DB and Water Out 7°C, heating at ambient 7°C DB / 6°C WB and water out 55°C)
- \*\*\*\* The sound power level is measured with accordance to EN12102 under conditions of the EN14825.
- It is recommended to follow DHW tank water quality limit for Panasonic Air to Water All in One according to Drinking Water Directive 98/83 EC