Outdoor unit design section

1. System Composition

1.1 Outdoor Units Series

Capacity (HP)	70 (3)	90 (4)	120(4.5)	140 (5)	160 (6)
Model	AHW-070UCSDP	AHW-090UCSDP	AHW-120UCSDP	AHW-140UCSEP	AHW-160UCSEP

1.2 System Diagram

Water module: Integrates heat exchanger, water pump, water system regulator equipment, expansion tank, pressure gauge and other components. The cold flow (heat) in the refrigerant is transferred to the water system through the heat exchanger.

2. Specification

Outdoor unit Model				AHW-070UCSDP	AHW-090UCSDP	AHW-120UCSDP
Indoor unit Model				AHM-070UXCSAPA3	AHM-160UXCSAPA3	AHM-160UXCSAPA3
Power supply				1PH,220~240V/50Hz	1PH,220~240V/50Hz	1PH,220~240V/50Hz
Heating(AW35) without axillary heater	Rated Capacity（A 7℃/W 35℃）average		kW	7	9	12
	Rated Power（A 7℃/W 35℃）		kW	1.56	1.95	2.93
	COP（A 7℃/W 35℃）		kW/kW	4.50	4.62	4.10
	Heating Capacity（A2℃/W 35℃）cold		kW	6.9	8.1	11.1
	COP（A2℃/W 35℃）		kW/kW	3.54	3.23	2.94
	Heating Capacity（A-7℃/W 35℃）		kW	6.35	7.2	9.95
	COP（A-7℃/W 35℃）		kW/kW	2.13	2.42	2.15
	Heating Capacity（A14℃/W 35℃）warm		kW	10	12	15
Heating(AW35) with axillary heater	Rated Capacity（A 7℃/W 35℃）average		kW	7(+3)	9(+3)	12(+3)
	Rated Power（A 7℃/W 35℃）		kW	1.56(+3)	1.95(+3)	2.93(+3)
	COP（A 7℃/W 35℃）		kW/kW	6.43	6.16	5.13
	Heating Capacity（A2℃/W 35℃）cold		kW	6.9(+3)	8.1(+3)	11.1(+3)
	COP（A2℃/W 35℃）		kW/kW	4.50	4.31	3.59
	Heating Capacity（A-7℃/W 35℃）		kW	6.35(+3)	7.2(+3)	9.95(+3)
	COP（A-7℃/W 35℃）		kW/kW	2.25	2.31	2.05
	Heating Capacity（A14℃/W 35℃）warm		kW	13	15	18
Heating A7/6℃ LWC45℃（DT=5℃）	Heating Capacity		kW	6.2	8.12	10.95
	COP		kW/kW	3.52	3.78	3.50
CoolingA35℃ LWE18℃（DT=5℃）	Rated Capacity		kW	6.5	8	10.5
	EER		kW/kW	3.00	2.90	2.80
Energy Efficiency Grade	Heating（35℃）			A+	A++	A++
Dimensions	H*W*D		mm	800×950×370	800×950×370	800×950×370
Packing dimensions	H*W*D		mm	930×1025×460	930×1025×460	930×1025×460
Operation Ambient Range	Heating		℃	-20~35	-20~35	-20~35
	Domestic Hot Water		℃	-20~43	-20~43	-20~43
	Cooling		℃	10~43	10~43	10~43
Heating	Sound Pressure		dB(A)	51	52	54
	Sound Power		dB(A)	64	65	67
Cooling	Sound Pressure		dB(A)	50	51	53
	Sound Power		dB(A)	63	64	66
Refrigerent	Type		-	R410A	R410A	R410A
	charge		kg	2.3	3.05	3.05
Heat Exchanger	Form		-	Multi-channel Cross Flow Finned Tube		
	Piping	Material	-	Brass		
		Outer Diameter	φmm	7	7	7
		Number of Rows	-	2	2.5	2.5
	Fin	Material	-	Aluminum		
		Pitch	mm	1.4	1.4	1.4
	Maximum Operation Pressure		MPa	4.15	4.15	4.15
	Maximum Windward Area		m^2	1.5	1.96	1.96
	Qty.		-	1	1	1
	Form		-	Axial fan		
	Qty.		-	1	1	1
	Outer Diameter		φmm	544	544	544
	Rotating Speed		rpm	664	780	780
	Fan Motor	Nominal Air Volume	m^3/min	64	69	69
		Form	-	Fully Enclosed Waterproof Motor		
		Start Mode	-	DC start		
		Nominal Output Power	W	138	138	138
		Qty.	-	1	1	1
		Insulation Class	-	E	E	E
Compressor	Leakage Pressure	Exhaust Pressure	MPa	4.15	4.15	4.15
		Suction Pressure	MPa	2.21	2.21	2.21
	Compressor Motor	Start Mode	-	Variable frequency		
		Number of Poles	-	4	4	4
		Insulation Class	-	E	E	E
	Refrigeration Oil	Grade	-	HAF68D1C	α68HES-H	α68HES-H
		Injection Volume	L	0.88	1.65	1.65

Notes：Test conditon of heat pump with electrically driven compressor for space heating and cooling based on the EN 14511-2-2011.

Outdoor unit Model				AHW-140UCSEP	AHW-160UCSEP
Indoor unit Model				AHM-160UXCSAPA3	AHM-160UXCSAPA3
Power supply				1PH,220~240V/50Hz	1PH,220~240V/50Hz
Heating(AW35) without axillary heater	Rated Capacity（A 7℃/W 35℃）average		kW	14	16
	Rated Power（A 7℃/W 35℃）		kW	2.89	3.38
	COP（A 7℃/W 35℃）		kW/kW	4.84	4.74
	Heating Capacity（A2℃/W 35℃）cold		kW	14	16
	COP（A2℃/W 35℃）		kW/kW	4.11	4.64
	Heating Capacity（A-7℃/W 35℃）		kW	14	16
	COP（A-7℃/W 35℃）		kW/kW	3.07	2.81
	Heating Capacity（A14℃/W 35℃）warm		kW	17	19
Heating(AW35) with axillary heater	Rated Capacity（A 7℃/W 35℃）average		kW	14(+3)	16(+3)
	Rated Power（A 7℃/W 35℃）		kW	2.89(+3)	3.38(+3)
	COP（A 7℃/W 35℃）		kW/kW	5.88	5.63
	Heating Capacity（A2℃/W 35℃）cold		kW	14(+3)	14(+3)
	COP（A2℃/W 35℃）		kW/kW	4.11	3.94
	Heating Capacity（A-7℃/W 35℃）		kW	14(+3)	14(+3)
	COP（A-7℃/W 35℃）		kW/kW	2.42	2.37
	Heating Capacity（A14℃/W 35℃）warm		kW	20	22
Heating A7/6℃ LWC45℃（DT=5℃）	Heating Capacity		kW	14	16
	COP		kW/kW	4.70	4.43
CoolingA35℃ LWE18℃（DT=5℃）	Rated Capacity		kW	12	13.5
	EER		kW/kW	2.77	2.53
Energy Efficiency Grade	Heating（35℃）			A++	A++
Dimensions	H*W*D		mm	1380×950×370	1380×950×370
Packing dimensions	H*W*D		mm	1477×1025×600	1477×1025×600
Operation Ambient Range	Heating		℃	-20~35	-20~35
	Domestic Hot Water		℃	-20~43	-20~43
	Cooling		℃	10~43	10~43
Heating	Sound Pressure		dB(A)	51	52
	Sound Power		dB(A)	65	66
Cooling	Sound Pressure		dB(A)	50	51
	Sound Power		dB(A)	64	65
Refrigerent	Type		-	R410A	R410A
	charge		kg	4.9	4.9
Heat Exchanger	Form		-	Fully Enclosed Waterproof Motor	
	Piping	Material	-	Brass	
		Outer Diameter	φmm	7	7
		Number of Rows	-	2	2
	Fin	Material	-	Aluminum	
		Pitch	mm	1.4	1.4
	Maximum Operation Pressure		MPa	4.15	4.15
	Maximum Windward Area		m^2	1.35	1.35
	Qty.		-	2	2
	Form		-	Axial fan	Axial fan
	Qty.		-	2	2
	Outer Diameter		φmm	544	544
	Rotating Speed		rpm	560+464	560+464
	Fan Motor	Nominal Air Volume	m^3/min	90	100
		Form	-	Fully Enclosed Waterproof Motor	
		Start Mode	-	DC start	DC start
		Nominal Output Power	W	51+51	51+51
		Qty.	-	2	2
		Insulation Class	-	E	E
Compressor	Leakage Pressure	Exhaust Pressure	MPa	4.15	4.15
		Suction Pressure	MPa	2.21	2.21
	Compressor Motor	Start Mode	-	Variable frequency	
		Number of Poles	-	6	6
		Insulation Class	-	B	B
	Refrigeration Oil	Grade	-	POE 32-3MAF	POE 32-3MAF
		Injection Volume	L	1.18	1.18

3.Electrical Parameters

Outdoor Unit Electrical Parameters

Model	Main power supply			Operating voltage range/V		Rate power/KW		Rated current/A		Maximum current/A	
	VOL	PH	Hz	Max.	Min.	Cooling	Heating	Cooling	Heating	Cooling	Heating
AHW-070UCSDP	220 ~240	1	50	264	198	2.17	1.56	10.5	7.5	27.5	27.5
AHW-090UCSDP						2.76	1.95	13.3	9.4	28.0	28.0
AHW-120UCSDP						3.75	2.93	18.1	14.2	28.0	28.0
AHW-140UCSEP						4.33	2.89	20.9	14.0	27.5	27.5
AHW-160UCSEP						5.34	3.38	25.8	16.3	27.5	27.5

VOL: Rated supply voltage (V) RLA: Rated load current (A) RNC: Operating current (A) Hz: Frequency (HZ)
PH: Phase (ø) IPT: Rated input power (kW) STC: Start current (A) MRC: Maximum running current (A)

Note:

1. Above compressor parameters are tested under 100% indoor and outdoor configuration.
2. Above characteristic parameters are tested when equivalent pipe length is 7.5m and pipe height difference is 0m.
3. See the table below for site wiring:

Model	Power supply	Max. running current	Power cord size	Comm. cable spec.	ELB		Fuse
					Standand current	Current sensitivity	
		A	mm^2	mm^2	A	mA	A
AHW-070UCSDP	220-240V ~ 50Hz	27.5	6.0	0.75	32	30	32
AHW-090UCSDP	220-240V ~ 50Hz	28.0	6.0	0.75	32	30	32
AHW-120UCSDP							
AHW-140UCSEP	220-240V ~ 50Hz	27.5	6.0	0.75	32	30	32
AHW-160UCSEP							

4.Capacity table

Unit:KW

Cooling capacity tables

Model	Tarb ℃	20℃		25℃		30℃		35℃		40℃		45℃	
	LWC	CC(KW)	PI(KW)	CC(KW)	PI(KW)	CC(KW)	PI(KW)	CC(KW)	PI(KW)	CC(KW)	PI(KW)	CC(KW)	PI(KW)
16KW	5	13.75	4.70	13.58	4.90	13.42	5.10	13.25	5.30	13.08	5.50	12.91	5.70
	7	14.01	4.74	13.84	4.94	13.67	5.14	13.50	5.34	13.33	5.54	13.16	5.74
	10	14.09	4.84	13.92	5.04	13.75	5.24	13.58	5.44	13.42	5.64	13.25	5.84
	13	14.13	4.90	13.96	5.10	13.80	5.30	13.63	5.50	13.46	5.70	13.29	5.90
	15	14.18	4.75	14.01	5.05	13.84	5.35	13.67	5.55	13.50	5.75	13.33	5.95
	18	14.22	4.81	14.05	5.11	13.88	5.41	13.71	5.61	13.54	5.81	13.37	6.01
	22	14.93	4.82	14.77	5.22	14.60	5.72	14.43	5.92	14.26	6.12	14.09	6.32
	25	15.61	4.95	15.44	5.35	15.27	5.85	15.10	6.05	14.93	6.25	14.77	6.45
14KW	5	12.25	3.61	12.10	3.81	11.95	4.01	11.80	4.21	11.65	4.41	11.50	4.61
	7	12.47	3.73	12.32	3.93	12.17	4.13	12.00	4.33	11.87	4.53	11.72	4.73
	10	12.55	3.90	12.40	4.10	12.25	4.30	12.10	4.50	11.95	4.70	11.80	4.90
	13	12.59	4.10	12.44	4.30	12.29	4.50	12.14	4.70	11.99	4.90	11.84	5.10
	15	12.62	4.15	12.47	4.35	12.32	4.55	12.17	4.75	12.02	4.95	11.87	5.15
	18	12.66	4.21	12.51	4.41	12.36	4.61	12.21	4.81	12.06	5.01	11.91	5.21
	22	13.30	4.52	13.15	4.72	13.00	4.92	12.85	5.12	12.70	5.32	12.55	5.52
	25	13.90	4.62	13.75	4.82	13.60	5.02	13.45	5.22	13.30	5.42	13.15	5.62
12KW	5	10.75	3.35	10.62	3.55	10.49	3.75	10.36	3.95	10.22	4.15	10.09	4.35
	7	10.95	3.15	10.82	3.35	10.68	3.55	10.50	3.75	10.42	3.95	10.29	4.15
	10	11.01	3.30	10.88	3.50	10.75	3.70	10.62	3.90	10.49	4.10	10.36	4.30
	13	11.04	3.50	10.91	3.70	10.78	3.90	10.65	4.10	10.52	4.30	10.39	4.50
	15	11.08	3.55	10.95	3.75	10.82	3.95	10.68	4.15	10.55	4.35	10.42	4.55
	18	11.11	3.61	10.98	3.81	10.85	4.01	10.72	4.21	10.59	4.41	10.45	4.61
	22	11.67	3.92	11.54	4.12	11.41	4.32	11.27	4.52	11.14	4.72	11.01	4.92
	25	12.19	4.02	12.06	4.22	11.93	4.42	11.80	4.62	11.67	4.82	11.54	5.02
9KW	5	8.45	1.96	8.25	2.16	8.05	2.36	7.85	2.56	7.65	2.76	7.45	2.96
	7	8.60	2.16	8.40	2.36	8.20	2.56	8.00	2.76	7.80	2.96	7.60	3.16
	10	9.50	2.50	9.30	2.70	9.10	2.90	8.90	3.10	8.70	3.30	8.50	3.50
	13	10.12	2.70	9.92	2.90	9.72	3.10	9.52	3.30	9.32	3.50	9.12	3.70
	15	10.32	2.75	10.12	2.95	9.92	3.15	9.72	3.35	9.52	3.55	9.32	3.75
	18	11.35	2.81	11.15	3.01	10.95	3.21	10.75	3.41	10.55	3.61	10.35	3.81
	22	12.20	3.12	12.00	3.32	11.80	3.52	11.60	3.72	11.40	3.92	11.20	4.12
	25	12.60	3.22	12.40	3.42	12.20	3.62	12.00	3.82	11.80	4.02	11.60	4.22
7KW	5	6.80	1.80	6.60	2.00	6.40	2.20	6.20	2.40	6.00	2.60	5.80	2.80
	7	7.10	1.57	6.90	1.77	6.70	1.97	6.50	2.17	6.30	2.37	6.10	2.57
	10	7.50	1.90	7.30	2.10	7.10	2.30	6.90	2.50	6.70	2.70	6.50	2.90
	13	8.12	2.10	7.92	2.30	7.72	2.50	7.52	2.70	7.32	2.90	7.12	3.10
	15	8.32	2.15	8.12	2.35	7.92	2.55	7.72	2.75	7.52	2.95	7.32	3.15
	18	9.35	2.21	9.15	2.41	8.95	2.61	8.75	2.81	8.55	3.01	8.35	3.21
	22	10.20	2.52	10.00	2.72	9.80	2.92	9.60	3.12	9.40	3.32	9.20	3.52
	25	10.60	2.62	10.40	2.82	10.20	3.02	10.00	3.22	9.80	3.42	9.60	3.62
5KW	5	4.73	1.62	4.59	1.80	4.45	1.98	4.31	2.16	4.18	2.34	4.04	2.52
	7	4.94	1.41	4.80	1.59	4.66	1.77	4.50	1.95	4.38	2.13	4.25	2.31
	10	5.21	1.71	5.08	1.89	4.94	2.07	4.80	2.25	4.66	2.43	4.52	2.61
	13	5.64	1.89	5.51	2.07	5.37	2.25	5.23	2.43	5.09	2.61	4.95	2.79
	15	5.78	1.93	5.64	2.11	5.51	2.29	5.37	2.47	5.23	2.65	5.09	2.83
	18	6.50	1.99	6.36	2.17	6.22	2.35	6.08	2.53	5.94	2.70	5.80	2.88
	22	7.08	2.26	6.95	2.44	6.81	2.62	6.67	2.80	6.53	2.98	6.39	3.16
	25	7.36	2.35	7.22	2.53	7.08	2.71	6.95	2.89	6.81	3.07	6.67	3.25

Unit:KW

Heating capacity tables

Model	LWC	30℃		35℃		40℃		45℃		50℃		55℃	
	Tarb ℃	HC (KW)	PI(KW)	HC(KW)	PI(KW)	HC(KW)	PI(KW)	HC(KW)	PI(KW)	HC(KW)	PI(KW)	HC(KW)	PI(KW)
16KW	-20	11.50	4.98	11.25	4.38	11.05	4.63						
	-15	14.14	4.72	14.04	4.92	14.00	5.17	13.92	5.42	13.82	5.67		
	-10	16.00	5.62	16.00	5.82	15.99	6.07	15.96	6.32	15.93	6.57	15.90	6.82
	-7	16.00	5.50	16.00	5.70	16.00	5.95	15.98	6.20	15.95	6.45	15.92	6.70
	-5	16.00	4.92	16.00	5.12	16.00	5.37	16.00	5.62	15.97	5.87	15.94	6.12
	-2	16.00	4.31	16.00	4.51	16.00	4.76	16.00	5.01	15.99	5.26	15.96	5.51
	0	16.00	3.71	16.00	3.91	16.00	4.16	16.00	4.41	16.00	4.66	15.98	4.91
	2	16.00	3.25	16.00	3.45	16.00	3.70	16.00	3.95	16.00	4.20	16.00	4.45
	5	16.00	2.92	16.00	3.40	16.00	3.51	16.00	3.62	16.00	3.87	16.00	4.12
	7	16.00	2.93	16.00	3.38	16.00	3.48	16.00	3.61	16.00	3.86	16.00	4.11
	10	17.07	2.92	17.05	3.12	17.04	3.37	17.01	3.62	16.98	3.87	16.95	4.12
	12	18.12	2.96	18.10	3.16	18.09	3.41	18.06	3.66	18.03	3.91	18.00	4.16
	15	20.00	2.98	19.50	3.18	19.00	3.43	18.40	3.68	18.20	3.93	18.30	4.18
	20	22.50	2.99	22.00	3.19	21.40	3.44	20.80	3.69	20.30	3.94	19.80	4.19
14KW	-20	11.00	4.80	10.95	4.25	10.55	4.46						
	-15	14.00	4.58	14.00	4.78	13.93	4.99	13.86	5.21	13.79	5.43		
	-10	14.00	4.45	14.00	4.65	13.95	4.86	13.88	5.08	13.81	5.30	13.74	5.52
	-7	14.00	4.36	14.00	4.56	13.97	4.77	13.90	4.99	13.83	5.21	13.76	5.43
	-5	14.00	3.92	14.00	4.12	13.99	4.33	13.92	4.55	13.85	4.77	13.78	4.99
	-2	14.00	3.66	14.00	3.86	14.00	4.07	13.94	4.29	13.87	4.51	13.80	4.73
	0	14.00	3.55	14.00	3.75	14.00	3.96	14.00	4.18	13.97	4.40	13.90	4.62
	2	14.00	3.30	14.00	3.41	14.00	3.52	14.00	3.74	14.00	4.16	13.95	4.28
	5	14.00	3.02	14.00	3.22	14.00	3.43	14.00	3.65	14.00	3.87	14.00	4.09
	7	14.00	2.16	14.00	2.89	14.00	2.92	14.00	2.98	14.00	3.32	14.00	3.74
	10	15.52	2.17	15.02	2.37	14.57	2.58	14.27	2.80	14.20	3.02	14.20	3.24
	12	16.64	2.18	16.04	2.38	15.54	2.59	15.04	2.81	14.54	3.03	14.24	3.25
	15	18.02	2.19	17.42	2.39	16.92	2.60	16.32	2.82	15.92	3.04	15.52	3.26
	20	20.01	2.38	19.41	2.40	18.81	2.61	18.21	2.83	17.71	3.05	17.21	3.27
12KW	-20	9.42	4.44	8.92	4.45	8.42	4.55						
	-15	9.62	4.47	9.12	4.48	8.62	4.58						
	-10	10.01	4.67	9.51	4.68	9.01	4.78	8.51	4.88				
	-7	10.45	4.61	9.95	4.62	9.45	4.72	8.95	4.82				
	-5	10.80	4.22	10.30	4.23	9.80	4.33	9.30	4.43				
	-2	11.20	3.81	10.70	3.82	10.20	3.92	9.70	4.02	9.20	4.12		
	0	11.55	3.79	11.05	3.81	10.55	3.91	10.05	4.01	9.55	4.11		
	2	11.60	3.77	11.10	3.78	10.60	3.88	10.10	3.98	9.60	4.08	9.10	4.18
	5	12.35	3.27	11.85	3.28	11.35	3.38	10.85	3.48	10.35	3.58	9.85	3.68
	7	12.50	2.92	12.00	2.93	11.50	3.03	10.95	3.13	10.95	3.23	10.95	3.33
	10	13.15	2.87	12.65	2.88	12.15	2.98	11.65	3.08	11.15	3.18	10.65	3.28
	12	13.50	2.82	13.00	2.83	12.50	2.93	12.00	3.03	11.50	3.13	11.00	3.23
	15	15.00	2.77	14.50	2.78	14.00	2.88	13.50	2.98	13.00	3.08	12.50	3.18
	20	14.80	2.72	14.30	2.73	13.80	2.83	13.30	2.93	12.80	3.03	12.30	3.13
9KW	-20	6.40	2.93	5.90	2.94	5.40	3.04						
	-15	6.80	3.13	6.30	3.14	5.80	3.24						
	-10	7.25	3.01	6.75	3.02	6.25	3.12	5.75	3.22				
	-7	7.70	2.97	7.20	2.98	6.70	3.08	6.20	3.18				
	-5	8.15	2.72	7.65	2.73	7.15	2.83	6.65	2.93				
	-2	8.60	2.52	8.10	2.53	7.60	2.63	7.10	2.73	6.60	2.83		
	0	8.65	2.54	8.15	2.55	7.65	2.65	7.15	2.75	6.65	2.85		
	2	8.60	2.50	8.10	2.51	7.60	2.61	7.10	2.71	6.60	2.81	6.10	2.91
	5	9.50	2.19	9.00	2.20	8.50	2.30	8.00	2.40	7.50	2.50	7.00	2.60
	7	9.50	1.94	9.00	1.95	8.50	2.05	8.12	2.15	8.12	2.25	8.12	2.35
	10	10.15	1.89	9.65	1.90	9.15	2.00	8.65	2.10	8.15	2.20	7.65	2.30
	12	10.50	1.84	10.00	1.85	9.50	1.95	9.00	2.05	8.50	2.15	8.00	2.25
	15	12.00	1.79	11.50	1.80	11.00	1.90	10.50	2.00	10.00	2.10	9.50	2.20
	20	12.05	1.79	11.55	1.80	11.05	1.90	10.55	2.00	10.05	2.10	9.55	2.20
7KW	-20	6.40	2.88	5.90	2.89	5.40	2.99						
	-15	6.80	3.11	6.30	3.12	5.80	3.22						
	-10	6.82	3.01	6.32	3.02	5.82	3.12	5.32	3.22				
	-7	6.85	2.97	6.35	2.98	5.85	3.08	5.35	3.18				
	-5	6.90	2.31	6.40	2.32	5.90	2.42	5.40	2.52				
	-2	7.00	2.31	6.50	2.32	6.00	2.42	5.50	2.52	5.00	2.62		
	0	7.10	1.94	6.60	1.95	6.10	2.05	5.60	2.15	5.10	2.25		
	2	7.40	1.94	6.90	1.95	6.40	2.05	5.90	2.15	5.40	2.25	4.90	2.35
	5	7.55	1.76	7.05	1.77	6.55	1.87	6.05	1.97	5.55	2.07	5.05	2.17
	7	7.50	1.55	7.00	1.56	6.50	1.66	6.20	1.76	6.20	1.86	6.20	1.96
	10	9.15	1.45	8.65	1.46	8.15	1.56	7.65	1.66	7.15	1.76	6.65	1.86
	12	9.50	1.49	9.00	1.50	8.50	1.60	8.00	1.70	7.50	1.80	7.00	1.90
	15	10.00	1.49	9.50	1.50	9.00	1.60	8.50	1.70	8.00	1.80	7.50	1.90
	20	10.50	1.49	10.00	1.50	9.50	1.60	9.00	1.70	8.50	1.80	8.00	1.90
5KW	-20	4.50	2.25	4.08	2.26	3.67	2.37						
	-15	4.83	2.26	4.42	2.27	4.00	2.38						
	-10	4.85	2.28	4.43	2.29	4.02	2.40	3.60	2.50				
	-7	4.88	2.29	4.46	2.30	4.04	2.41	3.63	2.51				
	-5	4.92	2.38	4.50	2.39	4.08	2.49	3.67	2.59				
	-2	5.00	2.39	4.58	2.40	4.17	2.50	3.75	2.60	3.33	2.70		
	0	5.08	2.44	4.67	2.45	4.25	2.55	3.83	2.65	3.42	2.76		
	2	5.50	2.23	5.08	2.24	4.67	2.34	4.25	2.45	3.83	2.55	3.42	2.65
	5	5.46	2.04	5.04	2.05	4.63	2.15	4.21	2.25	3.79	2.35	3.38	2.46
	7	5.42	1.44	5.00	1.45	4.58	1.55	4.17	1.66	3.75	1.76	3.33	1.86
	10	6.79	1.45	6.38	1.46	5.96	1.56	5.54	1.67	5.13	1.77	4.71	1.87
	12	7.08	1.47	6.67	1.48	6.25	1.58	5.83	1.69	5.42	1.79	5.00	1.89
	15	7.50	1.53	7.08	1.54	6.67	1.65	6.25	1.75	5.83	1.85	5.42	1.95
	20	7.92	1.53	7.50	1.54	7.08	1.65	6.67	1.75	6.25	1.85	5.83	1.95