

ComfortStar®

Air Conditioning & Heating Products

CSC + CSH SERIES

220V-3Ph-60Hz

COMMERCIAL SPLIT SYSTEMS | 7.5 & 10 TON



Comfort, it's in our name.

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ComfortStar®

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FEATURES

CSC + CSH SERIES



Dual-Circuit Design: Available in 7.5-ton and 10-ton capacities with dual refrigeration circuits, providing enhanced reliability and efficient load management.



Comes standard with TXV (Thermostatic Expansion Valve) for precise refrigerant control and optimal system performance.



Flexible Installation Options: Supports both horizontal and vertical installations to fit a variety of mechanical room layouts and design requirements.



Service-Friendly Layout: Designed for easy maintenance — the evaporator inlet/outlet pipes, control box, fan, and motor are all positioned on the same side for convenient access.



Universal 24V Communication: Fully compatible with any 24V condensing unit, offering broad system flexibility and simplified integration.



Air inlet and outlet configurations are clearly marked for simplified setup and airflow management.



CSH SERIES 220V-3Ph-60Hz

COMMERCIAL SPLIT SYSTEMS

7.5 & 10 TON



Model			CSH90-3	CSH120-3
Power Supply		V/h/Hz	220V-3Ph-60Hz	220V-3Ph-60Hz
Cooling Capacity		Btu/h	88700	119400
		W	26000	35000
Indoor Air Flow		CFM	3000	3000
Indoor Fan	Material		Metal	Metal
	Type		Centrifugal Fan	Centrifugal Fan
Fan Motor	Quantity		1	1
	Type		AC	AC
Indoor Coill	Fin Type		Hydrophilic Aluminum Fin	Hydrophilic Aluminum Fin
	Tube Type		Inner Grooved Copper Pipe	Inner Grooved Copper Pipe
	Number of Circuits		2	2
ESP		In.wg	1.5 (0.6-2.6)	1.5 (0.6-2.6)
Indoor Noise Level		dB(A)	56	60
Refrigerant System	Refrigerant Type		R410A	R410A
	Throttle Type		TXV	TXV
	Design Pressure	Pa	4.4/2.6	4.4/2.6
	Liquid Pipe	In	1/2	1/2
	Gas Pipe	In	7/8	7/8
Filter Level			G1	G1
Wired Control			Optional	Optional
Dimension (W×H×D)		In	57-3/32×44-7/8×28-11/32	57-3/32×44-7/8×28-11/32
Packing (W×H×D)		In	57-7/8×45-1/16×35-3/64	57-7/8×45-1/16×35-3/64
Net/Gross Weight		lbs.	419/500	419/500
Drain Pipe Size			3/4" NPT Female	3/4" NPT Female

Comfort, it's in our name.

CSC SERIES 220V-3Ph-60Hz

COMMERCIAL SPLIT SYSTEMS

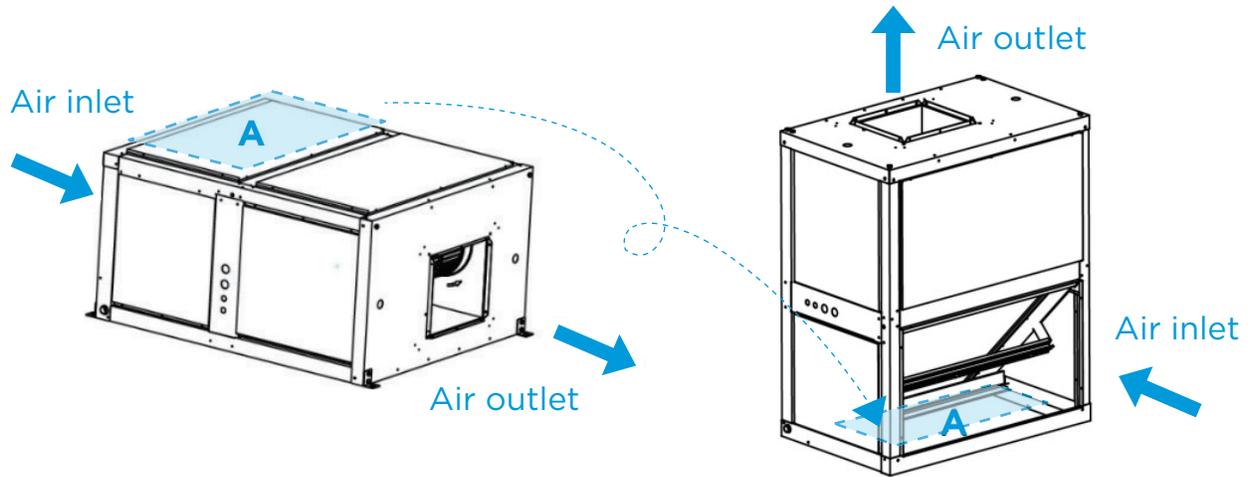
7.5 & 10 TON



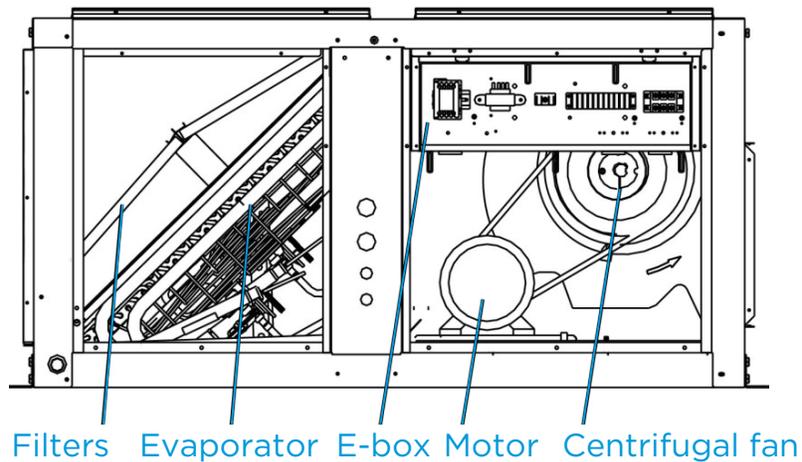
Model			CSC90-3	CSC120-3
Power Supply	V/h/Hz		208-230V~, 3Ph, 60Hz	208-230V~, 3Ph, 60Hz
Ambient Temperature in Cooling			17~52	17~52
Rated Input (Outdoor unit)	W		16700	18200
Rated Current (Outdoor unit)	A		44.4	53.1
Noise Level	dB(A)		69	70
Compressor	Type		Scroll	Scroll
	Qty		1	1
Refrigerant Type/Charge			R410A/6500g	R410A/7500g
Fan	Type		Axial fan	Axial fan
	Qty		2	2
Coil	Type		Copper Tube and Aluminum Fin	Copper Tube and Aluminum Fin
	No. of Rows		3	3
Refrigerant Pipe	Liquid Side/ Gas Side	mm	Φ9.52 / Φ22	Φ12.7 / Φ25
		inch	Φ3/8 / Φ7/8	Φ1/2 / Φ1
	Max. Pipe Length	m	50	50
		ft	164	164
Max. Difference in Level		25m(O.D. up) /30m(O.D. down)	25m(O.D. up) /30m(O.D. down)	
Connection Wire	Power Wire		5×16.0mm ²	5×20.0mm ²
	Signal Wire (I.D. & O.D.)		2×1.0mm ²	2×1.0mm ²
	Signal Wire (When double.)		3×0.5mm ²	3×0.5mm ²
Dimension (W×H×D)	inch		44-1/2 × 35-3/4 × 27-1/2	44-1/2 × 35-3/4 × 27-1/2
Packing (W×H×D)	inch		51-7/8 × 42× 28-3/4	51-7/8 × 42× 28-3/4
Net/ Gross Weight	lb.		412/450	439/474

INSTALLATION

- 7.5ton and 10ton, dual circuits design, standard with TXV.
- Flexible installation, horizontal installation and vertical installation are available.



- 24V universal communication, compatible with 24V condenser units.
- Easy maintenance, Inlet & outlet pipe of evaporator, control box, fan and motor are in same side.

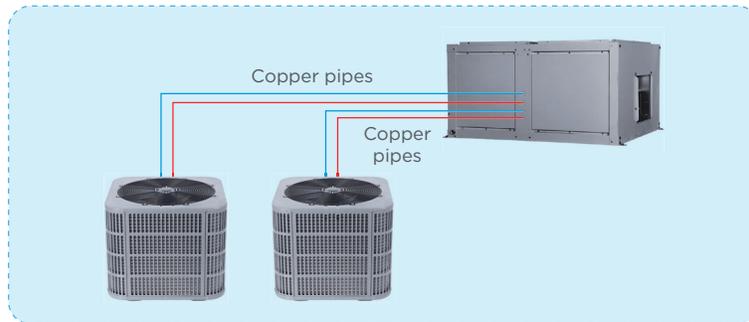


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SOLUTIONS

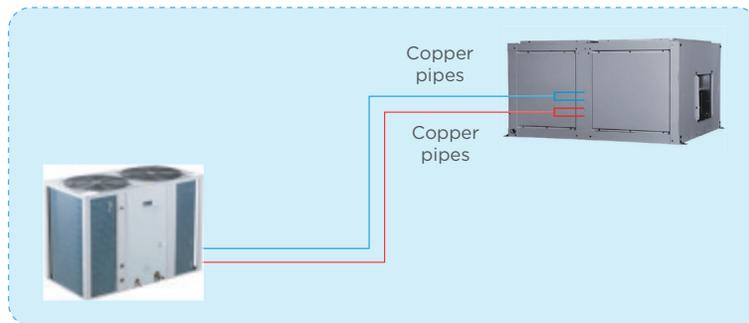
1. Condenser x2 + AHU (24V protocol)

Two condensers can be connected to one AHU (24V protocol), with each condenser connected to its own evaporator circuit.



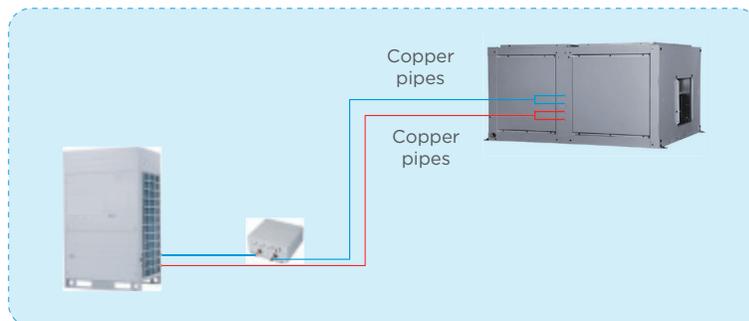
2. Condenser + AHU (24V protocol)

7.5- and 10-ton condensers can be connected to one AHU (24V protocol).



3. VRF ODU + kit + AHU (RS485 protocol)

One VRF outdoor unit can be connected to one AHU using an AHU kit.



AIRFLOW DATA

Air Volume	Static Pressure External to Unit – Inches Water Gauge												
	0.6		0.8		1.0		1.2		1.4		1.6		
	CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3,000													
3,200													
3,400													
3,600													
3,800													
4,000													
4,200													
4,400													
4,600													
4,800													
5,000												978	1.5
5,200												982	1.5
5,400										930	1.5	986	1.5
5,600										934	1.5	990	1.5
5,800								880	1.5	939	1.5	994	1.5
6,000						831	1.5	886	1.5	944	1.5	999	1.5
6,200						837	1.5	892	1.5	949	1.5		
6,400			779	1.50	844	1.5	898	1.5					
6,600	728	1.5	786	1.50	851	1.5	911	1.5					
6,800	737	1.5	800	1.50	858	1.5							
7,000	745	1.5	808	1.50									
7,200	760	1.5	816	1.50									

Air Volume	Static Pressure External to Unit – Inches Water Gauge										
	1.8		2.0		2.2		2.4		2.6		
	CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3,000						1233	1.5	1279	1.5		
3,200						1242	1.5	1288	1.5	1341	1.5
3,400			1175	1.5	1232	1.5	1297	1.5			
3,600			1149	1.5	1223	1.5	1287	1.5			
3,800			1132	1.5	1205	1.5	1277	1.5			
4,000			1124	1.5	1187	1.5	1258	1.5			
4,200			1109	1.5	1179	1.5	1240	1.5			
4,400			1102	1.5	1163	1.5					
4,600	1043	1.5	1096	1.5	1156	1.5					
4,800	1037	1.5	1098	1.5	1149	1.5					
5,000	1040	1.5	1093	1.5							
5,200	1036	1.5	1096	1.5							
5,400	1039	1.5									
5,600	1043	1.5									
5,800											
6,000											
6,200											
6,400											
6,600											
6,800											
7,000											
7,200											

BHP: Brake Horsepower

RPM: Blower Speed

CAPACITY TABLE

Gross Cooling Capacity (kW)																			
Outdoor DB(°C)		29.40									35.00								
Indoor	WB(°C)	16.10			19.40			22.80			16.10			19.40			22.80		
CFM	DB(°C)	TC	SC	PI	TC	SC	PI	TC	SC	PI									
2,510	23.90	18.06	12.04	5.22	18.96	12.64	5.48	19.91	13.27	5.76	17.53	11.69	6.05	18.41	12.27	6.35	19.33	12.89	6.66
	26.70	18.78	14.45	5.43	19.72	15.17	5.70	20.70	15.93	5.99	18.23	14.02	6.29	19.14	14.73	6.60	20.10	15.46	6.93
	29.40	19.53	16.28	5.65	20.51	17.09	5.93	21.53	17.94	6.23	18.96	15.80	6.54	19.91	16.59	6.87	20.91	17.42	7.21
	32.20	20.31	18.47	5.87	21.33	19.39	6.17	22.39	20.36	6.48	19.72	17.93	6.80	20.71	18.82	7.14	21.74	19.77	7.50
2,700	23.90	21.12	14.08	6.11	22.18	14.79	6.41	23.29	15.53	6.74	20.51	13.67	7.07	21.53	14.36	7.43	22.61	15.07	7.80
	26.70	21.97	16.90	6.35	23.07	17.74	6.67	24.22	18.63	7.00	21.33	16.41	7.35	22.40	17.23	7.72	23.52	18.09	8.11
	29.40	22.85	19.04	6.61	23.99	19.99	6.94	25.19	20.99	7.28	22.18	18.49	7.65	23.29	19.41	8.03	24.46	20.38	8.43
	32.20	23.76	21.60	6.87	24.95	22.68	7.22	26.20	23.82	7.58	23.07	20.97	7.96	24.22	22.02	8.35	25.43	23.12	8.77
3,000	23.90	24.71	16.47	7.15	25.95	17.30	7.50	27.25	18.16	7.88	23.99	16.00	8.27	25.19	16.79	8.69	26.45	17.63	9.12
	26.70	25.70	19.77	7.43	26.99	20.76	7.80	28.34	21.80	8.19	24.95	19.19	8.60	26.20	20.15	9.03	27.51	21.16	9.49
	29.40	26.47	22.06	7.66	27.80	23.16	8.04	29.19	24.32	8.44	25.70	21.42	8.86	26.99	22.49	9.31	28.34	23.61	9.77
	32.20	27.27	24.79	7.89	28.63	26.03	8.28	30.06	27.33	8.69	26.47	24.07	9.13	27.80	25.27	9.58	29.19	26.53	10.06
3,480	23.90	28.08	18.72	8.12	29.49	19.66	8.53	30.96	20.64	8.95	27.27	18.18	9.40	28.63	19.09	9.87	30.06	20.04	10.37
	26.70	28.93	22.25	8.37	30.37	23.36	8.78	31.89	24.53	9.22	28.08	21.60	9.68	29.49	22.68	10.17	30.96	23.82	10.68
	29.40	29.79	24.83	8.62	31.28	26.07	9.05	32.85	27.37	9.50	28.93	24.11	9.97	30.37	25.31	10.47	31.89	26.58	11.00
	32.20	30.69	27.90	8.88	32.22	29.29	9.32	33.83	30.76	9.78	29.79	27.09	10.27	31.28	28.44	10.79	32.85	29.86	11.33

Notes:

DB= Dry Bulb temperature; WB= Wet Bulb Temperature

TC= Total Capacity (Unit: kW)

SC= Sensible Capacity (Unit: kW)

PI = Power Input (Unit: kW)



CAPACITY TABLE

Gross Cooling Capacity (kW)																			
Outdoor DB(°C)		40.60									46.10								
Indoor	WB(°C)	16.10			19.40			22.80			16.10			19.40			22.80		
CFM	DB(°C)	TC	SC	PI															
2,510	23.90	16.75	11.17	7.23	17.59	11.72	7.59	18.46	12.31	7.97	16.26	10.84	8.36	17.07	11.38	8.78	17.93	11.95	9.22
	26.70	17.42	13.40	7.51	18.29	14.07	7.89	19.20	14.77	8.28	16.91	13.01	8.70	17.76	13.66	9.13	18.64	14.34	9.59
	29.40	18.11	15.10	7.81	19.02	15.85	8.21	19.97	16.64	8.62	17.59	14.66	9.05	18.47	15.39	9.50	19.39	16.16	9.97
	32.20	18.84	17.13	8.13	19.78	17.98	8.53	20.77	18.88	8.96	18.29	16.63	9.41	19.20	17.46	9.88	20.16	18.33	10.37
2,700	23.90	19.59	13.06	8.45	20.57	13.71	8.88	21.60	14.40	9.32	19.02	12.68	9.78	19.97	13.32	10.27	20.97	13.98	10.79
	26.70	20.38	15.67	8.79	21.39	16.46	9.23	22.46	17.28	9.69	19.78	15.22	10.18	20.77	15.98	10.69	21.81	16.78	11.22
	29.40	21.19	17.66	9.14	22.25	18.54	9.60	23.36	19.47	10.08	20.57	17.14	10.58	21.60	18.00	11.11	22.68	18.90	11.67
	32.20	22.04	20.04	9.51	23.14	21.04	9.98	24.30	22.09	10.48	21.40	19.45	11.01	22.47	20.42	11.56	23.59	21.45	12.13
3,000	23.90	22.92	15.28	9.89	24.07	16.04	10.38	25.27	16.85	10.90	22.25	14.84	11.45	23.37	15.58	12.02	24.53	16.36	12.62
	26.70	23.84	18.34	10.28	25.03	19.25	10.80	26.28	20.22	11.34	23.14	17.80	11.90	24.30	18.69	12.50	25.52	19.63	13.13
	29.40	24.55	20.46	10.59	25.78	21.48	11.12	27.07	22.56	11.68	23.84	19.86	12.26	25.03	20.86	12.88	26.28	21.90	13.52
	32.20	25.29	22.99	10.91	26.55	24.14	11.46	27.88	25.35	12.03	24.55	22.32	12.63	25.78	23.44	13.26	27.07	24.61	13.92
3,480	23.90	26.05	17.36	11.24	27.35	18.23	11.80	28.72	19.14	12.39	25.29	16.86	13.01	26.55	17.70	13.66	27.88	18.59	14.34
	26.70	26.83	20.64	11.57	28.17	21.67	12.15	29.58	22.75	12.76	26.05	20.04	13.40	27.35	21.04	14.07	28.72	22.09	14.77
	29.40	27.63	23.03	11.92	29.02	24.18	12.52	30.47	25.39	13.14	26.83	22.36	13.80	28.17	23.48	14.49	29.58	24.65	15.22
	32.20	28.46	25.88	12.28	29.89	27.17	12.89	31.38	28.53	13.54	27.63	25.12	14.21	29.02	26.38	14.93	30.47	27.70	15.67

Notes:

- DB= Dry Bulb temperature; WB= Wet Bulb Temperature**
- TC= Total Capacity (Unit: kW)**
- SC= Sensible Capacity (Unit: kW)**
- PI = Power Input (Unit: kW)**



CAPACITY TABLE

Gross Cooling Capacity (kW)																			
Outdoor DB(°C)		29.40									35.00								
Indoor	WB(°C)	16.10			19.40			22.80			16.10			19.40			22.80		
CFM	DB(°C)	TC	SC	PI															
3,230	23.90	24.33	16.22	7.04	25.55	17.03	7.39	26.82	17.88	7.76	23.62	15.75	8.14	24.80	16.53	8.55	26.04	17.36	8.98
	26.70	25.30	19.46	7.32	26.57	20.44	7.68	27.90	21.46	8.07	24.57	18.90	8.47	25.79	19.84	8.89	27.08	20.83	9.34
	29.40	26.31	21.93	7.61	27.63	23.02	7.99	29.01	24.18	8.39	25.55	21.29	8.81	26.83	22.35	9.25	28.17	23.47	9.71
	32.20	27.37	24.88	7.91	28.74	26.12	8.31	30.17	27.43	8.73	26.57	24.15	9.16	27.90	25.36	9.62	29.29	26.63	10.10
3,500	23.90	28.46	18.97	8.23	29.88	19.92	8.64	31.38	20.92	9.07	27.63	18.42	9.53	29.01	19.34	10.00	30.46	20.31	10.51
	26.70	29.60	22.77	8.56	31.08	23.91	8.99	32.63	25.10	9.44	28.74	22.11	9.91	30.17	23.21	10.41	31.68	24.37	10.93
	29.40	30.78	25.65	8.90	32.32	26.94	9.35	33.94	28.28	9.82	29.89	24.91	10.31	31.38	26.15	10.82	32.95	27.46	11.36
	32.20	32.02	29.10	9.26	33.62	30.56	9.72	35.30	32.09	10.21	31.08	28.26	10.72	32.64	29.67	11.25	34.27	31.15	11.82
4,000	23.90	33.30	22.20	9.63	34.96	23.31	10.11	36.71	24.47	10.62	32.33	21.55	11.15	33.94	22.63	11.70	35.64	23.76	12.29
	26.70	34.63	26.64	10.01	36.36	27.97	10.51	38.18	29.37	11.04	33.62	25.86	11.59	35.30	27.15	12.17	37.07	28.51	12.78
	29.40	35.67	29.72	10.31	37.45	31.21	10.83	39.32	32.77	11.37	34.63	28.86	11.94	36.36	30.30	12.54	38.18	31.81	13.16
	32.20	36.74	33.40	10.62	38.57	35.07	11.16	40.50	36.82	11.71	35.67	32.42	12.30	37.45	34.05	12.91	39.32	35.75	13.56
4,550	23.90	37.84	25.23	10.94	39.73	26.49	11.49	41.72	27.81	12.06	36.74	24.49	12.67	38.57	25.72	13.30	40.50	27.00	13.97
	26.70	38.97	29.98	11.27	40.92	31.48	11.83	42.97	33.05	12.43	37.84	29.11	13.05	39.73	30.56	13.70	41.72	32.09	14.39
	29.40	40.14	33.45	11.61	42.15	35.13	12.19	44.26	36.88	12.80	38.97	32.48	13.44	40.92	34.10	14.11	42.97	35.81	14.82
	32.20	41.35	37.59	11.96	43.41	39.47	12.56	45.59	41.44	13.18	40.14	36.49	13.84	42.15	38.32	14.53	44.26	40.23	15.26

Gross Cooling Capacity (kW)																			
Outdoor DB(°C)		40.60									46.10								
Indoor	WB(°C)	16.10			19.40			22.80			16.10			19.40			22.80		
CFM	DB(°C)	TC	SC	PI															
3,230	23.90	22.40	14.93	9.07	23.52	15.68	9.53	24.70	16.46	10.01	21.75	14.50	10.51	22.83	15.22	11.03	23.98	15.98	11.58
	26.70	23.30	17.92	9.44	24.46	18.82	9.91	25.68	19.76	10.41	22.62	17.40	10.93	23.75	18.27	11.47	24.93	19.18	12.05
	29.40	24.23	20.19	9.82	25.44	21.20	10.31	26.71	22.26	10.82	23.52	19.60	11.36	24.70	20.58	11.93	25.93	21.61	12.53
	32.20	25.20	22.91	10.21	26.46	24.05	10.72	27.78	25.25	11.25	24.46	22.24	11.82	25.69	23.35	12.41	26.97	24.52	13.03
3,500	23.90	26.20	17.47	10.62	27.51	18.34	11.15	28.89	19.26	11.70	25.44	16.96	12.29	26.71	17.81	12.90	28.05	18.70	13.55
	26.70	27.25	20.96	11.04	28.61	22.01	11.59	30.05	23.11	12.17	26.46	20.35	12.78	27.78	21.37	13.42	29.17	22.44	14.09
	29.40	28.34	23.62	11.48	29.76	24.80	12.06	31.25	26.04	12.66	27.52	22.93	13.29	28.89	24.08	13.96	30.34	25.28	14.66
	32.20	29.48	26.80	11.94	30.95	28.14	12.54	32.50	29.54	13.17	28.62	26.02	13.82	30.05	27.32	14.52	31.55	28.68	15.24
4,000	23.90	30.65	20.44	12.42	32.19	21.46	13.04	33.80	22.53	13.69	29.76	19.84	14.38	31.25	20.83	15.10	32.81	21.88	15.85
	26.70	31.88	24.52	12.92	33.48	25.75	13.56	35.15	27.04	14.24	30.95	23.81	14.95	32.50	25.00	15.70	34.13	26.25	16.49
	29.40	32.84	27.36	13.30	34.48	28.73	13.97	36.20	30.17	14.67	31.88	26.57	15.40	33.48	27.90	16.17	35.15	29.29	16.98
	32.20	33.82	30.75	13.70	35.51	32.29	14.39	37.29	33.90	15.11	32.84	29.85	15.86	34.48	31.34	16.66	36.20	32.91	17.49
4,550	23.90	34.84	23.22	14.11	36.58	24.39	14.82	38.41	25.61	15.56	33.82	22.55	16.34	35.51	23.68	17.16	37.29	24.86	18.01
	26.70	35.88	27.60	14.54	37.68	28.98	15.26	39.56	30.43	16.03	34.84	26.80	16.83	36.58	28.14	17.67	38.41	29.54	18.55
	29.40	36.96	30.80	14.97	38.81	32.34	15.72	40.75	33.96	16.51	35.88	29.90	17.33	37.68	31.40	18.20	39.56	32.97	19.11
	32.20	38.07	34.61	15.42	39.97	36.34	16.19	41.97	38.15	17.00	36.96	33.60	17.85	38.81	35.28	18.75	40.75	37.04	19.68

Notes:

DB= Dry Bulb temperature; WB= Wet Bulb Temperature

TC= Total Capacity (Unit: kW)

SC= Sensible Capacity (Unit: kW)

PI = Power Input (Unit: kW)

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