

WS Series

Air Cooler with Water Defrosting





AIR COOLER WITH WATER DEFROSTING

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1. Product Description

1 Casing

Casing: Adopt high-quality steel plate with powder coating RAL9003; Has strong corrosion resistance;

2 Heat exchanger coil

Heat exchanger coil: Copper tubing $\phi 15$, Spacing 50×50 ; Corrugated aluminium fins, fin spacing 4.2mm, 6.4mm & 9.0mm;

3 Fans

Fans: Axial fans with High wind circle, working temperature -40°C to 60°C ;
High air duct design with Integral stretching, good ventilation effect, further athrow, lower noise;
Fans individually connected to junction box; an blade $\phi 400$, $\phi 500$, $\phi 630$, standard 4-pole motor;

4 Water Defrosting

Water Defrosting: Using water defrosting method, the defrosting time is short, and the little effect on cold room temperature; Sieve pore type defrosting water pan and inner & outer water baffles are used to prevent water spraying into cold storage and wind blades during defrosting;

5 Refrigerants

It can meet the requirements of R404A, R507A, R448A, R449A, R134a, R22 and other refrigerants.

2. Model Description

WS 110 / 3 40 M - T - V

V	Pre-installation expansion valve (Optional)
T	Voltage, T: 3P / 380V / 50hz
M	Fin spacing code, M: 4.2mm, L: 6.4mm, J: 9.0mm
40	Fan Diameter (CM)
3	Number of fans
110	Surface (m^2)
WS	Product line code



3. Performance Data Sheet

3.1 Fin Spacing 4.2 mm

Model	R404A Capacity (kW)		Surface (m ²)	Volume (dm ³)	Airflow (m ³ /h)	Airthrow (m)	Fan Power (W)	Fan Current (A)	Defrost (m ³ /h)	Weight (kg)
	Tc=0°C, ΔT=8K	Tc=-18°C, ΔT=7K								
WS36/140M-T	5.4	4.3	35.9	5.9	2700	3	240	0.52	1.2	68
WS54/240M-T	9.2	7.4	53.9	8.2	6000	6	480	1.04	2.3	98
WS72/240M-T	10.8	8.6	71.9	10.9	5400	5	480	1.04	2.3	110
WS83/340M-T	14.1	11.3	82.9	12.3	9000	7	720	1.56	2.7	148
WS110/340M-T	16.6	13.3	110.6	16.4	8100	6	720	1.56	3.6	159
WS144/440M-T	21.6	17.3	143.8	21.1	10800	9	960	2.08	4.6	203
WS180/540M-T	27.0	21.6	179.7	26.2	13500	12	1200	2.6	5.8	244
WS58/150M-T	9.8	7.8	58.1	9.3	6000	10	548	1.1	1.9	103
WS73/150M-T	11.2	8.9	72.6	11.3	5750	10	548	1.1	2.4	109
WS87/150M-T	12.5	10.0	87.1	13.3	5500	10	548	1.1	2.8	115
WS116/250M-T	19.7	15.8	116.1	17.4	12000	13	1096	2.2	3.8	176
WS145/250M-T	22.4	17.9	145.2	21.4	11500	13	1096	2.2	4.8	187
WS174/250M-T	25.0	20.0	174.2	25.5	11000	13	1096	2.2	5.6	198
WS174/350M-T	29.6	23.6	174.2	25.5	18000	15	1644	3.3	5.6	245
WS205/350M-T	32.4	25.9	205.3	29.7	17250	15	1644	3.3	6.8	262
WS261/350M-T	37.5	30.0	261.3	37.6	16500	15	1644	3.3	8.4	279
WS274/450M-T	43.2	34.6	273.7	39.2	23000	17	2192	4.4	9.0	335
WS348/450M-T	49.6	39.7	348.4	49.7	22000	17	2192	4.4	11.2	357
WS199/263M-T	31.8	25.4	199.0	28.9	20400	22	1874	3.5	6.4	267
WS249/263M-T	36.1	28.9	248.8	36.1	19800	22	1874	3.5	8.2	287
WS299/263M-T	40.4	32.3	298.5	43.3	19200	22	1874	3.5	9.6	307
WS299/363M-T	47.7	38.2	298.5	42.8	30600	25	2811	5.25	9.6	377
WS373/363M-T	54.2	43.3	373.2	53.5	29700	25	2811	5.25	12.3	407
WS448/363M-T	60.6	48.5	447.8	64.1	28800	25	2811	5.25	14.3	437

Remarks: 1). Tc is the coldroom temp., and ΔT is the difference between the coldroom temp. and the evaporation temperature.

2). Calculating of defrosting water flow: water inlet temperature 15 C and outlet temperature 5 C, defrost time 5 minutes.

3.2 Fin Spacing 6.4 mm

Model	R404A Capacity (kW)		Surface (m ²)	Volume (dm ³)	Airflow (m ³ /h)	Airthrow (m)	Fan Power (W)	Fan Current (A)	Defrost (m ³ /h)	Weight (kg)
	Tc=0°C, ΔT=8K	Tc=-18°C, ΔT=7K								
WS24/140L-T	4.1	3.3	24.1	5.9	2900	3	240	0.52	0.85	65
WS36/240L-T	6.4	5.1	36.1	8.2	6400	6	480	1.04	1.7	93
WS48/240L-T	8.2	6.6	48.2	10.9	5800	5	480	1.04	1.7	104
WS56/340L-T	9.7	7.8	55.6	12.3	9600	7	720	1.56	2.0	141
WS74/340L-T	12.5	10.0	74.1	16.4	8700	6	720	1.56	2.6	149
WS96/440L-T	16.4	13.1	96.3	21.1	11600	9	960	2.08	3.4	191
WS120/540L-T	20.5	16.4	120.4	26.2	14500	12	1200	2.6	4.2	229
WS39/150L-T	8.2	6.6	38.9	9.3	6200	10	548	1.1	1.4	98
WS49/150L-T	9.6	7.6	48.6	11.3	5950	10	548	1.1	1.7	103
WS58/150L-T	11.0	8.8	58.4	13.3	5700	10	548	1.1	2.0	108
WS78/250L-T	16.5	13.2	77.8	17.4	12400	13	1096	2.2	2.7	166
WS97/250L-T	19.2	15.3	97.3	21.5	11900	13	1096	2.2	3.4	175



3.2 Fin Spacing 6.4 mm (continued)

Model	R404A Capacity (kW)		Surface (m ²)	Volume (dm ³)	Airflow (m ³ /h)	Airthrow (m)	Fan Power (W)	Fan Current (A)	Defrost (m ³ /h)	Weight (kg)
	T _c =0°C, ΔT=8K	T _c =-18°C, ΔT=7K								
WS117/250L-T	21.9	17.5	116.7	25.5	11400	13	1096	2.2	4.1	183
WS117/350L-T	24.8	19.8	116.7	25.5	18600	15	1644	3.3	4.1	229
WS138/350L-T	27.3	21.8	137.6	29.7	17850	15	1644	3.3	4.8	240
WS175/350L-T	32.9	26.3	175.1	37.6	17100	15	1644	3.3	6.1	256
WS183/450L-T	36.1	28.9	183.4	39.2	23800	17	2192	4.4	6.5	308
WS234/450L-T	43.8	35.0	233.5	49.7	22800	17	2192	4.4	8.2	327
WS133/263L-T	26.7	21.4	133.4	28.9	21200	22	1874	3.5	4.7	250
WS167/263L-T	30.8	24.6	166.8	36.1	11600	22	1874	3.5	5.8	266
WS200/263L-T	35.0	28.0	200.2	43.3	20000	22	1874	3.5	7.0	281
WS200/363L-T	40.0	32.0	200.2	42.8	31800	25	2811	5.25	7.0	352
WS250/363L-T	46.3	37.0	250.1	53.5	30900	25	2811	5.25	8.8	375
WS300/363L-T	52.5	42.0	300.2	64.1	30000	25	2811	5.25	10.5	398

Remarks: 1). T_c is the coldroom temp., and ΔT is the difference between the coldroom temp. and the evaporation temperature.

2). Calculating of defrosting water flow: water inlet temperature 15 C and outlet temperature 5 C, defrost time 5 minutes.

3.3 Fin Spacing 9.0 mm

Model	R404A Capacity (kW)		Surface (m ²)	Volume (dm ³)	Airflow (m ³ /h)	Airthrow (m)	Fan Power (W)	Fan Current (A)	Defrost (m ³ /h)	Weight (kg)
	T _c =0°C, ΔT=8K	T _c =-18°C, ΔT=7K								
WS18/140J-T	3.2	2.6	17.6	5.9	3100	3	240	0.52	0.65	64
WS26/240J-T	5.0	4.0	26.3	8.2	6800	6	480	1.04	1.2	92
WS35/240J-T	6.4	5.1	35.1	10.9	6200	5	480	1.04	1.2	102
WS41/340J-T	7.6	6.1	40.5	12.3	10200	7	720	1.56	1.4	141
WS54/340J-T	9.7	7.8	54.0	16.4	9300	6	720	1.56	1.9	147
WS70/440J-T	12.8	10.2	70.3	21.1	12400	9	960	2.08	2.5	188
WS88/540J-T	16.0	12.8	87.8	26.2	15500	12	1200	2.6	3.1	226
WS28/150J-T	7.0	5.6	28.3	9.3	6400	10	548	1.1	1.0	96
WS36/150J-T	8.6	6.8	35.5	11.3	6150	10	548	1.1	1.3	101
WS43/150J-T	10.1	8.1	42.5	13.3	5900	10	548	1.1	1.5	106
WS57/250J-T	14.1	11.3	56.6	17.4	12800	13	1096	2.2	2.1	162
WS71/250J-T	17.2	13.7	70.9	21.5	12300	13	1096	2.2	2.6	171
WS85/250J-T	20.2	16.2	85.0	25.5	11800	13	1096	2.2	3.0	179
WS85/350J-T	21.2	17.0	85.0	25.5	19200	15	1644	3.3	3.0	224
WS100/350J-T	24.2	19.4	100.3	29.7	18400	15	1644	3.3	3.6	235
WS128/350J-T	30.3	24.2	127.5	37.6	17700	15	1644	3.3	4.5	251
WS134/450J-T	32.5	26.0	133.8	39.2	24600	17	2192	4.4	4.8	300
WS170/450J-T	40.4	32.3	170.0	49.7	23600	17	2192	4.4	6.0	320
WS97/263J-T	23.1	18.5	97.1	28.9	22000	22	1874	3.5	3.4	246
WS122/263J-T	27.3	21.8	121.6	36.1	21400	22	1874	3.5	4.4	259
WS146/263J-T	31.4	25.1	145.7	43.3	20800	22	1874	3.5	5.1	271
WS146/363J-T	34.7	27.8	145.7	42.8	33000	25	2811	5.25	5.1	345
WS182/363J-T	40.9	32.7	182.4	53.5	32100	25	2811	5.25	6.6	367
WS219/363J-T	47.1	37.7	218.5	64.1	31200	25	2811	5.25	7.7	388



4. Outline & Installation Dimensions

Model	Dimension (mm)			Install (mm)						Connect Pipe			
	L	W	H	A	B	B1	B2	B3	B4	Refrigerant		Defrost	
WS*/140*	1050	690	875	530	680	/	/	/	/	φ12	φ22	G1.5"	G2.5"
WS*/240*	1700	690	875	530	1330	/	/	/	/	φ16	φ28	G1.5"	G2.5"
WS*/340*	2400	690	875	530	2030	/	/	/	/	φ22	φ42	G1.5"	G2.5"
WS*/440*	3000	690	875	530	2630	/	1300	/	/	φ22	φ42	2-G1.5"	G3"
WS*/540*	3650	690	875	530	3280	/	1300	1950	/	φ28	φ50	2-G1.5"	G3"
WS*/150*	1300	790	975	630	930	/	/	/	/	φ16	φ28	G2"	G3"
WS*/250*	2200	790	975	630	1830	900	/	/	/	φ22	φ42	G2"	G3"
WS*/350*	3100	790	975	630	2730	900	1800	/	/	φ28	φ50	2-G2"	G4"
WS*/450*	4000	790	975	630	3630	900	1800	2700	/	φ28	φ50	2-G2"	G4"
WS*/263*	2800	820	1175	630	2430	1200	/	/	/	φ22	φ42	G2"	G3"
WS*/363*	4000	820	1175	630	3630	1200	2400	/	/	φ28	φ50	2-G2"	G4"

