Air Handling Unit & Air Washer

هواساز و ایرواشر

No	Models	Fan				Coil size			Motor power (Kw)
		Model	No	CFM	Cfm Range	Length M (ft)	Height M (ft)	Face area M^2 (ft^2)	
1	MD(IF)AHU25	TF 10 x 10	1	2500	2000-3000	0.8 (2.62)	0.6 (1.97)	0.48 (5.16)	2.2
2	MD(IF)AHU35	TF 12 x 12	1	3500	3000-4500	0.95 (3.12)	0.7 (2.30)	0.67 (7.16)	3
3	MD(IF)AHU60	TF 15 x 15	1	6000	4500-7000	1.2 (3.94)	0.9 (2.95)	1.08 (11.62)	4
4	MD(IF)AHU100	TF 18 x 18	1	10000	7000-12000	1.5 (4.92)	1.2 (3.94)	1.80 (19.37)	7.5
5	MD(IF)AHU120	TF 15 x 15	2	12000	9000-14000	1.8 (5.90)	1.2 (3.94)	2.16 (23.24)	2 x 5.5
6	MD(IF)AHU150	TF 22 x 22	1	15000	12000-18000	2 (6.56)	1.3 (4.26)	2.6 (27.97)	11
7	MD(IF)AHU200	TF 25 x 25	1	20000	18000-25000	2.2 (7.22)	1.6 (5.25)	3.52 (37.88)	15
8	MD(IF)AHU220	TF 18 x 18	2	22000	18000 28000	2.2 (7.22)	1.8 (5.90)	3.96 (42.61)	2 x 5.5
9	MD(IF)AHU240	TF 28 x 28	1	24000	19000-28000	2.2 (7.22)	2 (6.56)	4.40 (47.34)	15
10	MD(IF)AHU300	TF 30 x 28	1	30000	23000-34000	2.2 (7.22)	2.4 (7.87)	5.28 (56.81)	18.5
11	MD(IF)AHU300	TF 22 x 22	2	30000	23000-34000	2.2 (7.22)	2.4 (7.87)	5.28 (56.81)	2 x 11
12	MD(IF)AHU400	TF 25 x 25	2	44000	32000-48000	3.1 (9.84)	2.4 (8.20)	7.50 (80.70)	2 x 15
13	MD(IF)AHU500	TF 28 x 28	2	50000	36000-55000	3.5 (11.15)	2.4 (8.20)	8.50 (91.46)	2 x 15

Maximum Air Delivery could found in CFM range.
Higher range will produce higher velocity on coils , surface area.
Higher ranges are for heating coils and only these ranges should be selected for heating coils.

Cooling coil capacities & Pressure drops

Entering dry bulb Air temperature of 80F and entering wet bulb Air temperature of 67F

T.C = Total Capacity S.C = Sensible Capacity W.P.D = Water Pressure Drop

Models		4 Rows			6 Rows			8 Rows		
	FPI	T.C. (MBH)	S.C. (MBH)	W.P.D. (ft.wg)	T.C. (MBH)	S.C. (MBH)	W.P.D. (ft.wg)	T.C. (MBH)	S.C. (MBH)	W.P.D. (ft.wg)
MD(IF)AHU25	8	68.6	48.8	1.7	74	58.4	3.2	78	56.8	0.8
	10	67.2	52.7	1.9	78.5	58.3	3.7	77.3	61.1	1.0
	12	70	55.3	2.0	83.1	63	4.2	80.7	63	1.1
	14	78.6	57.6	2.1	85.3	64.6	4.6	82.5	69	1.2
MD(IF)AHU35	8	89.6	68.3	2.8	94.1	76.1	0.8	103	86	1.4
	10	96.2	74.8	3.2	97	80	1.0	112	83.5	1.6
	12	100.7	78.8	3.5	105	84	1.1	116.3	88.3	1.8
	14	106.5	82.4	3.8	108.5	86	1.3	120.5	91.4	2.0
MD(IF)AHU60	8	134	110	0.8	169	133	1.5	188	145	2.5
	10	149	120	0.9	179	141	1.6	199	152	2.8
	12	159	132	0.9	187	146	1.8	203	156	3.0
	14	163	135	1.0	194	150	2.0	218	159	3.1
MD(IF)AHU100	8	238	195	1.4	297	228	3.0	328	246	4.7
	10	251	203	1.6	308	238	3.3	336	255	5.1
	12	277	225	1.8	326	249	3.6	350	262	5.5
	14	290	235	1.9	337	256	3.8	362	268	5.8
MD(IF)AHU120	8	308	253	2.6	357	275	5.1	393	296	7.8
	10	323	252	2.8	388	290	5.5	414	310	8.4
	12	348	262	3.1	397	300	5.9	426	317	9.0
	14	357	275	3.3	418	309	6.6	441	327	9.7
MD(IF)AHU150	8	448	298	3.4	481	419	7	486	457	1.6
	10	488	312	4	498	488	7.7	498	475	1.6
	12	432	334	4.3	510	380	8.5	504	486	1.7
	14	458	351	5.7	526	370	9	522	495	1.8
MD(IF)AHU200	8	520	395	4.5	586	453	2.8	626	484	1.9
	10	548	421	5	625	438	3	651	501	2
	12	585	458	5.6	682	497	3.3	685	516	2.1
	14	600	475	6.1	694	550	3.5	707	526	2.3
MD(IF)AHU220	8	524	453	4.3	647	508	2.7	680	530	1.8
	10	600	478	5	687	527	3	720	550	1.9
	12	656	500	5.5	720	547	3.2	751	570	2.1
	14	685	525	6	745	568	3.4	780	588	2.2
MD(IF)AHU240	8	621	473	4.5	708	548	2.8	740	576	1.8
	10	621	512	5.3	747	572	3.1	783	600	2
	12	718	548	5.8	781	595	3.4	816	620	2.2
	14	743	566	6.3	808	612	3.6	850	534	2.3
MD(IF)AHU300	8	778	598	4.4	880	689	2.8	990	786	1.8
	10	821	643	5.2	935	717	3.1	994	757	2
	12	798	680	5.7	978	745	3.3	1023	775	2.1
	14	930	710	6.8	1011	785	3.5	1068	795	2.3
MD(IF)AHU400	8	947	758	1.1	1205	918	3.6	1290	988	3.8
	10	1009	813	1.3	1281	978	4.0	1361	1024	4.0
	12	1070	860	1.4	1340	1007	4.6	1382	1043	4.4
	14	1116	893	1.5	1385	1055	5	1453	1078	4.7
MD(IF)AHU500	8	1187	913	1.9	1462	1107	9	1565	1185	6.1
	10	1267	998	2.2	1555	1178	10	1651	1256	6.5
	12	1348	1061	2.4	1627	1215	11	1705	1265	7.2
	14	1408	1100	2.6	1685	1258	12	1761	1295	7.7

Heating coil capacities & Pressure drops

No	Models	1 Row		2 Rows		3 Rows		4 Rows	
		Capacity (MBH)	P.P (Ft-water)	Capacity (MBH)	P.P (Ft-water)	Capacity (MBH)	P.P (Ft-water)	Capacity (MBH)	P.P (Ft-water)
1	MD(IF)AHU25	87.5	1.1	134	0.7	170	1.7	192	2.8
2	MD(IF)AHU35	124	1.3	191	1.1	240	2.8	270	4.6
3	MD(IF)AHU60	211	2.9	328	2.5	410	5.7	447	1.2
4	MD(IF)AHU100	341	1.0	554	4.0	676	3.2	754	2.3
5	MD(IF)AHU120	417	1.6	660	8.6	817	5.3	914	3.8
6	MD(IF)AHU150	520	2	800	1.4	1063	6.6	1150	5.3
7	MD(IF)AHU200	700	2.6	1085	1.7	1320	8.3	1542	6.7
8	MD(IF)AHU220	780	2.7	1200	1.6	1520	8.7	1700	6.1
9	MD(IF)AHU240	840	2.6	1300	1.7	1650	9.7	1840	6.4
10	MD(IF)AHU300	1050	2.6	1630	1.8	2060	8.9	2315	6.7
11	MD(IF)AHU400	1420	5.3	2205	3.4	2710	2.7	3080	2.1
12	MD(IF)AHU500	1700	8.6	2650	5.6	3280	3.8	3636	3.2

Entering dry bulb Air temperature of 60f and entering water temperature of 180/160F

Steam coils (MBH)

No	Models	1 Row	2 Rows	3 Rows	4 Rows
1	MD(IF)AHU25	134	198	247	278
2	MD(IF)AHU35	176	278	340	383
3	MD(IF)AHU60	270	446	560	636
4	MD(IF)AHU100	450	744	934	1062
5	MD(IF)AHU120	545	895	1122	1275
6	MD(IF)AHU150	690	1131	1411	1600
7	MD(IF)AHU200	920	1504	1878	2127
8	MD(IF)AHU220	998	1645	2060	2335
9	MD(IF)AHU240	1102	1810	2256	2555
10	MD(IF)AHU300	1380	2256	2816	3190
11	MD(IF)AHU400	1832	3011	3770	4270
12	MD(IF)AHU500	2233	3633	4535	5130

Entering dry bulb Air temperature of 60f and entering steam pressure of 15psi

Correction factors Air Quantity (CFM)

Entering Air Temperature (F)	30	40	50	60	70	80	90	100
Correction Factors	1.060	1.040	1.020	1.000	0.982	0.964	0.945	0.950

Properties of steam

Pressure (psig)	0	2	5	10	15	20	30	40
Temperature (F)	212	218	227	239	250	259	274	287
Latent Heat (Btu/lb)	970	966	961	952	945	939	929	919
Pressure (psig)	50	60	80	100	125	150	175	200
Temperature (F)	298	307	324	338	353	366	377	388
Latent Heat (Btu/lb)	911	904	891	881	868	857	847	838

Tel: (+98 21) 88 32 99 79 - 88 82 57 02 - 88 82 65 74 / Fax: (+98 21) 88 32 99 78 / Mobile: +98 912 145 43 49
www.mackesh-dahesh.com / mackesh.dahesh.co@gmail.com / info@mackesh-dahesh.ir

Correction factors steam

Steam Pressure (psig)	Entering Air Temperature (F)							
	30	40	50	60	70	80	90	100
0	0.849	0.802	0.756	0.709	0.662	0.616	0.569	0.522
2	0.880	0.833	0.786	0.740	0.693	0.646	0.600	0.553
5	0.920	0.873	0.827	0.780	0.733	0.687	0.640	0.593
10	0.977	0.930	0.884	0.837	0.791	0.744	0.696	0.650
15	1.026	0.978	0.932	0.885	0.838	0.792	0.745	0.698
20	1.067	1.021	0.974	0.927	0.881	0.834	0.787	0.732
30	1.139	1.092	1.045	1.000	0.955	0.906	0.860	0.813
40	1.198	1.151	1.104	1.058	1.011	0.965	0.918	0.871
50	1.250	1.203	1.156	1.109	1.063	1.016	0.969	0.923
60	1.294	1.248	1.201	1.154	1.108	1.061	1.014	0.968
80	1.372	1.325	1.278	1.231	1.186	1.139	1.093	1.045
100	1.436	1.390	1.343	1.297	1.250	1.203	1.156	1.110
125	1.506	1.461	1.414	1.367	1.320	1.273	1.226	1.181
150	1.568	1.521	1.474	1.427	1.380	1.335	1.288	1.240
175	1.622	1.575	1.529	1.482	1.435	1.389	1.342	1.292
200	1.670	1.624	1.576	1.531	1.484	1.436	1.390	1.344

Hot water & steam coils connections / Child water coils connections

No	Models	1 Row	2 Row	3 Row	4 Row	4 Row	6 Row	8 Row
1	MD(IF)AHU25	1"	1 1/4"	1 1/4"	1 1/2"	1 1/4"	1 1/2"	1 1/2"
2	MD(IF)AHU35	1 1/2"	1 1/2"	1 1/2"	2"	1 1/2"	1 1/2"	2"
3	MD(IF)AHU60	1 1/2"	2"	2"	2"	2"	2"	2"
4	MD(IF)AHU100	2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
5	MD(IF)AHU120	2"	2 1/2"	2 1/2"	3"	2 1/2"	3"	3"
6	MD(IF)AHU150	2 1/2"	2 1/2"	3"	3"	3"	3"	3"
7	MD(IF)AHU200	2 1/2"	3"	3"	3"	3"	3"	2 × 2 1/2"
8	MD(IF)AHU220	2 1/2"	3"	3"	3"	3"	2 × 2 1/2"	2 × 2 1/2"
9	MD(IF)AHU240	3"	3"	3"	2 × 2 1/2"	2 × 2 1/2"	2 × 2 1/2"	2 × 2 1/2"
10	MD(IF)AHU300	3"	3"	2 × 2 1/2"	2 × 2 1/2"	2 × 2 1/2"	2 × 3"	2 × 3"
11	MD(IF)AHU400	2 × 2"	2 × 2 1/2"	2 × 3"	2 × 3"	2 × 2 1/2"	2 × 3"	2 × 3"
12	MD(IF)AHU500	2 × 2"	2 × 2 1/2"	2 × 3"	2 × 3"	2 × 3"	2 × 3"	2 × 3"

Air washer efficiency

No	Model	Class 4				Class 6 / 8			
		Air velocity (F.P.M)							
		450	500	550	600	450	500	550	600
1	MD(IF)AW25C	0.59	0.57	0.55	0.54	0.86	0.85	0.84	0.82
2	MD(IF)AW35C	0.59	0.57	0.55	0.54	0.86	0.85	0.84	0.82
3	MD(IF)AW60C	0.60	0.58	0.56	0.55	0.88	0.86	0.85	0.83
4	MD(IF)AW100C	0.62	0.60	0.58	0.57	0.90	0.88	0.87	0.85
5	MD(IF)AW120C	0.63	0.61	0.59	0.58	0.91	0.89	0.88	0.86
6	MD(IF)AW150C	0.63	0.61	0.59	0.58	0.91	0.89	0.88	0.86
7	MD(IF)AW200C	0.65	0.63	0.61	0.60	0.93	0.91	0.90	0.88
8	MD(IF)AW220C	0.67	0.65	0.63	0.62	0.95	0.93	0.92	0.90
9	MD(IF)AW240C	0.67	0.65	0.63	0.62	0.95	0.93	0.92	0.90
10	MD(IF)AW300C	0.69	0.67	0.65	0.64	0.97	0.95	0.94	0.92
11	MD(IF)AW400C	0.70	0.68	0.66	0.65	0.98	0.96	0.95	0.93
12	MD(IF)AW500C	0.70	0.68	0.66	0.65	0.98	0.96	0.95	0.93

Water flow, Evaporation rate, Bleed of rate & Make up rate

No	Model	Class 4				Class 6 / 8			
		Water flow(GPM)	Evaporation of rate(GPM)	Bleed of rate(GPM)	Make up rate(GPM)	Water flow(GPM)	Evaporation of rate(GPM)	Bleed of rate(GPM)	Make up rate(GPM)
1	MD(IF)AW25	10	0.05	0.03	0.08	20	0.09	0.03	0.12
2	MD(IF)AW35	14	0.08	0.05	0.13	28	0.12	0.05	0.17
3	MD(IF)AW60	24	0.13	0.07	0.20	48	0.21	0.07	0.28
4	MD(IF)AW100	40	0.25	0.08	0.33	80	0.36	0.08	0.44
5	MD(IF)AW120	48	0.30	0.09	0.39	96	0.43	0.09	0.52
6	MD(IF)AW150	60	0.37	0.11	0.48	120	0.53	0.11	0.64
7	MD(IF)AW200	80	0.53	0.14	0.67	160	0.72	0.14	0.86
8	MD(IF)AW220	88	0.58	0.18	0.76	176	0.79	0.18	0.97
9	MD(IF)AW240	96	0.63	0.25	0.88	192	0.86	0.25	1.11
10	MD(IF)AW300	120	0.84	0.31	1.15	240	1.14	0.31	1.45
11	MD(IF)AW400	160	1.24	0.39	1.63	320	1.67	0.39	2.06
12	MD(IF)AW500	192	1.41	0.47	1.88	384	1.90	0.47	2.37

Class 4 Air Washers specifications

No	Model	Water	Face Area	No. of	Connection						Pump head
		Flow (GPM)	(ft²)	nozzle	D1	D2	D3	D4	D5	D6	Head (bar)
1	MD(IF)AW25	10	5.16	4	1"	11/2"	3/4"	1/2"	1 1/2"	1/2"	3
2	MD(IF)AW35	14	7.16	6	1 1/4"	1 1/2"	3/4"	1/2"	1 1/2"	1/2"	3
3	MD(IF)AW60	24	11.62	10	1 1/2"	1 1/2"	3/4"	1/2"	1 1/2"	1/2"	3
4	MD(IF)AW100	40	19.37	16	2"	2 1/2"	1"	1/2"	1 1/2"	1/2"	3
5	MD(IF)AW120	48	23.24	20	2"	2 1/2"	1"	1/2"	1 1/2"	1/2"	3
6	MD(IF)AW150	60	27.99	25	2 1/2"	3"	1 1/2"	3/4"	1 1/2"	3/4"	3
7	MD(IF)AW200	80	37.89	33	2 1/2"	3"	1 1/2"	3/4"	1 1/2"	3/4"	3
8	MD(IF)AW220	88	42.61	36	2 1/2"	3"	1 1/2"	3/4"	2"	3/4"	3
9	MD(IF)AW240	96	47.34	40	3"	4"	1 1/2"	3/4"	2"	3/4"	3
10	MD(IF)AW300	120	56.81	50	3"	4"	1 1/2"	1"	2"	1"	3
11	MD(IF)AW400	160	80.70	65	3"	4"	2"	1"	2"	1"	3
12	MD(IF)AW500	192	91.46	80	3"	4"	2"	1"	2"	1"	3

Class 6 / 8 Air Washers specifications

No	Model	Water	Face Area	No. of	Connection						Pump head
		Flow (GPM)	(ft²)	nozzle	D1	D2	D3	D4	D5	D6	Head (bar)
1	MD(IF)AW25	20	5.16	8	2×1"	1 1/2"	3/4"	1/2"	1 1/2"	1/2"	3
2	MD(IF)AW35	28	7.16	12	2×1 1/4"	1 1/2"	3/4"	1/2"	1 1/2"	1/2"	3
3	MD(IF)AW60	48	11.62	20	2×1 1/2"	1 1/2"	3/4"	1/2"	1 1/2"	1/2"	3
4	MD(IF)AW100	80	19.37	32	2×2"	2 1/2"	1"	1/2"	1 1/2"	1/2"	3
5	MD(IF)AW120	96	23.24	40	2×2"	2 1/2"	1"	1/2"	1 1/2"	1/2"	3
6	MD(IF)AW150	120	27.99	50	2×2 1/2"	3"	1 1/2"	3/4"	1 1/2"	3/4"	3
7	MD(IF)AW200	160	37.89	66	2×2 1/2"	3"	1 1/2"	3/4"	1 1/2"	3/4"	3
8	MD(IF)AW220	176	42.61	72	2×2 1/2"	3"	1 1/2"	3/4"	2"	3/4"	3
9	MD(IF)AW240	192	47.34	80	2×3"	4"	1 1/2"	3/4"	2"	3/4"	3
10	MD(IF)AW300	240	56.81	100	2×3"	4"	1 1/2"	1"	2"	1"	3
11	MD(IF)AW400	320	80.70	130	2×3"	4"	2"	1"	2"	1"	3
12	MD(IF)AW500	384	91.46	160	2×3"	4"	2"	1"	2"	1"	3

Tel: (+98 21) 88 32 99 79 - 88 82 57 02 - 88 82 65 74 / Fax: (+98 21) 88 32 99 78 / Mobile: +98 912 145 43 49
www.mackesh-dahesh.com / mackesh.dahesh.co@gmail.com / info@mackesh-dahesh.ir