



# KULTHORN KIRBY PUBLIC CO.,LTD.

## COMPRESSOR PERFORMANCE TABLE

26/01/2014

**AW 5545Z-9 91M**

### COMPRESSOR DATA

<b>Voltage Range</b>	342-462V, 50Hz
<b>Motor Type</b>	3PH
<b>Application</b>	High Back Pressure
<b>Refrigerant</b>	R 404A

### TEST CONDITIONS

<b>Condition</b>	ASHARE
<b>Voltage</b>	380-420V, 50Hz
<b>Return Gas</b>	35 ° C
<b>Liquid Temperature</b>	46 ° C
<b>Ambient Temperature</b>	35 ° C

		Condensing Temperature ° C					
		40	45	50	55	60	
Evaporating Temperature ° C	-21	Capacity (Watts)	3,258	2,921	2,647	2,389	2,101
		Power Input (Watts)	2,097	2,163	2,216	2,271	2,337
		Current (Amps)	6.19	6.26	6.32	6.38	6.45
		Mass Flow (kg/hr)	111	104	98	92	85
	-18	Capacity (Watts)	4,119	3,759	3,460	3,178	2,863
		Power Input (Watts)	2,280	2,351	2,410	2,469	2,540
		Current (Amps)	6.34	6.41	6.48	6.54	6.62
		Mass Flow (kg/hr)	133	125	118	112	104
	-15	Capacity (Watts)	5,012	4,627	4,303	3,993	3,651
		Power Input (Watts)	2,460	2,537	2,601	2,666	2,742
		Current (Amps)	6.49	6.56	6.64	6.71	6.79
		Mass Flow (kg/hr)	156	147	139	132	124
	-12	Capacity (Watts)	5,942	5,531	5,179	4,841	4,468
		Power Input (Watts)	2,639	2,721	2,791	2,860	2,941
		Current (Amps)	6.64	6.72	6.80	6.88	6.96
		Mass Flow (kg/hr)	178	169	160	152	143
	-9	Capacity (Watts)	6,913	6,473	6,092	5,723	5,319
		Power Input (Watts)	2,815	2,903	2,979	3,053	3,139
		Current (Amps)	6.79	6.88	6.96	7.05	7.14
		Mass Flow (kg/hr)	201	191	182	173	163
-6	Capacity (Watts)	7,928	7,458	7,046	6,645	6,207	
	Power Input (Watts)	2,991	3,085	3,166	3,245	3,335	
	Current (Amps)	6.95	7.04	7.13	7.22	7.32	
	Mass Flow (kg/hr)	225	214	204	194	184	
-3	Capacity (Watts)	8,991	8,490	8,045	7,609	7,136	
	Power Input (Watts)	3,166	3,266	3,352	3,436	3,531	
	Current (Amps)	7.11	7.20	7.30	7.39	7.50	
	Mass Flow (kg/hr)	249	237	227	216	205	
0	Capacity (Watts)	10,106	9,571	9,092	8,620	8,110	
	Power Input (Watts)	3,341	3,447	3,538	3,628	3,728	
	Current (Amps)	7.27	7.37	7.47	7.57	7.68	
	Mass Flow (kg/hr)	274	261	250	239	227	
3	Capacity (Watts)	11,277	10,707	10,191	9,682	9,133	
	Power Input (Watts)	3,517	3,628	3,725	3,819	3,924	
	Current (Amps)	7.44	7.54	7.65	7.75	7.87	
	Mass Flow (kg/hr)	299	285	273	261	249	
6	Capacity (Watts)	12,508	11,901	11,346	10,798	10,209	
	Power Input (Watts)	3,693	3,810	3,912	4,012	4,121	
	Current (Amps)	7.61	7.72	7.83	7.94	8.06	
	Mass Flow (kg/hr)	324	310	297	285	271	
9	Capacity (Watts)	13,802	13,156	12,561	11,972	11,341	
	Power Input (Watts)	3,871	3,993	4,100	4,205	4,319	
	Current (Amps)	7.78	7.90	8.01	8.13	8.26	
	Mass Flow (kg/hr)	350	335	322	308	294	



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## COMPRESSOR RATINGS COEFFICIENTS

26/01/2014

AW 5545Z-9 91M

### COMPRESSOR DATA

**Voltage Range** 342-462V, 50Hz  
**Motor Type** 3PH  
**Application** High Back Pressure  
**Refrigerant** R 404A

### TEST CONDITIONS

**Condition** ASHARE  
**Voltage** 380-420V, 50Hz  
**Return Gas** 35 °C  
**Liquid Temperature** 46 °C  
**Ambient Temperature** 35 °C

### PERFORMANCE EQUATION

$$Y = C_1 + C_2 T_e + C_3 T_c + C_4 T_e^2 + C_5 T_e T_c + C_6 T_c^2 + C_7 T_e^3 + C_8 T_e^2 T_c + C_9 T_e T_c^2 + C_{10} T_c^3$$

$T_e$  = Evaporating Temperature °C

$T_c$  = Condensing Temperature °C

### COEFFICIENTS

		Capacity	Input	Current	Mass Flow
$C_1$	=	2.201787E+04	5.859789E+02	5.800782E+00	5.198857E+02
$C_2$	=	4.588918E+02	3.967278E+01	4.554410E-02	1.038423E+01
$C_3$	=	-5.801328E+02	1.399291E+02	6.281310E-02	-1.155593E+01
$C_4$	=	3.881454E+00	2.102950E-02	2.873000E-04	2.751030E-02
$C_5$	=	-1.648160E+00	5.485193E-01	1.578000E-04	-5.528680E-02
$C_6$	=	9.564667E+00	-2.409152E+00	-9.083000E-04	1.824965E-01
$C_7$	=	2.350810E-02	2.837200E-03	2.900000E-06	5.800000E-05
$C_8$	=	-1.956160E-02	-3.040000E-05	-1.400000E-06	-1.020000E-05
$C_9$	=	-7.596300E-03	-2.003100E-03	1.900000E-06	5.730000E-05
$C_{10}$	=	-6.264920E-02	1.582740E-02	6.400000E-06	-1.188600E-03



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# KULTHORN KIRBY PUBLIC CO.,LTD.

## COMPRESSOR PERFORMANCE TABLE

26/01/2014

**AW 5545Z-9 91M**

### COMPRESSOR DATA

<b>Voltage Range</b>	414-506V, 60Hz
<b>Motor Type</b>	3PH
<b>Application</b>	High Back Pressure
<b>Refrigerant</b>	R 404A

### TEST CONDITIONS

<b>Condition</b>	ASHARE
<b>Voltage</b>	460V, 60Hz
<b>Return Gas</b>	35 ° C
<b>Liquid Temperature</b>	46 ° C
<b>Ambient Temperature</b>	35 ° C

		Condensing Temperature ° C					
		40	45	50	55	60	
Evaporating Temperature ° C	-21	Capacity (Watts)	3,607	3,206	2,912	2,640	2,306
		Power Input (Watts)	2,668	2,732	2,786	2,841	2,905
		Current (Amps)	6.25	6.31	6.37	6.43	6.49
		Mass Flow (kg/hr)	111	102	93	84	75
	-18	Capacity (Watts)	4,698	4,273	3,956	3,661	3,304
		Power Input (Watts)	2,857	2,927	2,988	3,049	3,120
		Current (Amps)	6.41	6.48	6.54	6.60	6.67
		Mass Flow (kg/hr)	139	128	118	109	100
	-15	Capacity (Watts)	5,815	5,365	5,021	4,701	4,320
		Power Input (Watts)	3,048	3,124	3,192	3,260	3,337
		Current (Amps)	6.57	6.64	6.71	6.78	6.85
		Mass Flow (kg/hr)	166	155	145	135	124
	-12	Capacity (Watts)	6,960	6,482	6,111	5,765	5,356
		Power Input (Watts)	3,239	3,322	3,397	3,471	3,556
		Current (Amps)	6.73	6.80	6.87	6.95	7.02
		Mass Flow (kg/hr)	194	182	171	160	150
	-9	Capacity (Watts)	8,135	7,627	7,228	6,853	6,416
		Power Input (Watts)	3,432	3,522	3,603	3,685	3,777
		Current (Amps)	6.88	6.96	7.04	7.12	7.20
		Mass Flow (kg/hr)	223	210	198	187	175
-6	Capacity (Watts)	9,343	8,804	8,374	7,968	7,501	
	Power Input (Watts)	3,628	3,724	3,812	3,901	4,000	
	Current (Amps)	7.04	7.12	7.21	7.29	7.38	
	Mass Flow (kg/hr)	252	238	226	213	201	
-3	Capacity (Watts)	10,587	10,015	9,552	9,114	8,615	
	Power Input (Watts)	3,825	3,929	4,024	4,120	4,227	
	Current (Amps)	7.20	7.29	7.38	7.47	7.56	
	Mass Flow (kg/hr)	283	268	254	241	228	
0	Capacity (Watts)	11,869	11,263	10,765	10,292	9,759	
	Power Input (Watts)	4,025	4,136	4,238	4,342	4,456	
	Current (Amps)	7.36	7.45	7.55	7.65	7.75	
	Mass Flow (kg/hr)	314	299	284	270	255	
3	Capacity (Watts)	13,192	12,549	12,015	11,505	10,937	
	Power Input (Watts)	4,228	4,346	4,456	4,567	4,688	
	Current (Amps)	7.52	7.63	7.73	7.83	7.94	
	Mass Flow (kg/hr)	348	331	315	299	284	
6	Capacity (Watts)	14,559	13,876	13,304	12,757	12,150	
	Power Input (Watts)	4,435	4,559	4,676	4,795	4,925	
	Current (Amps)	7.69	7.80	7.91	8.02	8.14	
	Mass Flow (kg/hr)	382	364	347	330	314	
9	Capacity (Watts)	15,971	15,248	14,636	14,049	13,403	
	Power Input (Watts)	4,644	4,777	4,901	5,028	5,165	
	Current (Amps)	7.87	7.98	8.10	8.22	8.34	
	Mass Flow (kg/hr)	419	399	381	363	345	



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26/01/2014

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COMPRESSOR DATA		TEST CONDITIONS	
Voltage Range	414-506V, 60Hz	Condition	ASHARE
Motor Type	3PH	Voltage	460V, 60Hz
Application	High Back Pressure	Return Gas	35 °C
Refrigerant	R 404A	Liquid Temperature	46 °C
		Ambient Temperature	35 °C

### PERFORMANCE EQUATION

$$Y = C_1 + C_2 T_e + C_3 T_c + C_4 T_e^2 + C_5 T_e T_c + C_6 T_c^2 + C_7 T_e^3 + C_8 T_e^2 T_c + C_9 T_e T_c^2 + C_{10} T_c^3$$

$T_e$  = Evaporating Temperature °C

$T_c$  = Condensing Temperature °C

### COEFFICIENTS

		Capacity	Input	Current	Mass Flow
$C_1$	=	3.080019E+04	1.742772E+03	6.138478E+00	5.247040E+02
$C_2$	=	5.333996E+02	5.042547E+01	4.403400E-02	1.418729E+01
$C_3$	=	-9.890360E+02	1.104023E+02	4.938980E-02	-8.187833E+00
$C_4$	=	3.091372E+00	1.075614E-01	7.670000E-05	1.148802E-01
$C_5$	=	-2.567561E+00	3.711618E-01	1.453000E-04	-9.128710E-02
$C_6$	=	1.740389E+01	-1.827594E+00	-6.636000E-04	9.661630E-02
$C_7$	=	1.591260E-02	1.998400E-03	6.800000E-06	1.036900E-03
$C_8$	=	-2.060660E-02	1.363200E-03	3.400000E-06	-9.499000E-04
$C_9$	=	2.084700E-03	1.185400E-03	2.800000E-06	1.786000E-04
$C_{10}$	=	-1.127455E-01	1.235300E-02	4.800000E-06	-5.833000E-04



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