KELVIN
Air Conditioning System

Qualified for **Energy Technology List**
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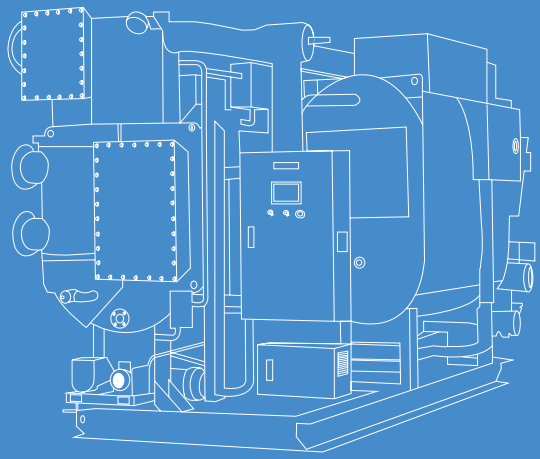
TM

bsi. ISO 9001 Quality Management | ISO 14001 Environmental Management

KELVIN Clim KDA

Cooling Capacity: 50 ~ 1500 USRT



Li-Br Mo | A++ CLASS | INVERTER | 1.5 ~ 1.2 | Anti Crystal

Double-Effect Direct Fired Absorption Chiller & Heater

KELVIN AIR CONDITIONING

KELVIN Clim KDA

KELVIN Clim KDA : Double-Effect Direct Fired Absorption Chiller & Heater
Cooling Capacity: 50 ~ 1500 USRT

KELVIN AIR CONDITIONING

Li-Br Mo | A++ CLASS | INVERTER | 1.5 ~ 1.2 | Anti Crystal

1. High rellablllty

- Designed to enhance the reliability and durability.
- Robust structure through the perfect reliability test for long time and higher reliability by adopting high quality components.

2. Efficient operation

- Energy saving and efficiency realized.
- Optimal control for the solution cycling volume by inverter depending on the cooling load.
- Optimal PID control by sensing the operating condition with the level sensor.
- Minimized power consumption due to precise operation and partial load operation.

[Option] Early reduction, Anti-freezing, Refrigerant generation, Solution refining, Tube ball clean, Crystal forming prevention from power failure.

3. Convenient partition

- Repair and maintenance is easy. Multi-partition structure.
- Mounting/detaching structure for easy repair and maintenance.
- Partial incoming to make it possible for field work such as remodeling at narrow space. Assembling at field is possible.

4. Perfect vacuum

- High performance & purge system.
- Cost-efficiency for maintenance.
- Leakage for one month at below 3cc.
- High vacuum condition.
- Auto purge. Non-condensing gas storage.
- Maintaining optimal operating condition.
- Operation with only minimum seam extraction.

5. Low noise and low vibration

- Below 75dB at 1 m distance for noise level.

6. Enough capacity

- Heating capacity increase system.
- Designed to increase up to 3 stages from the standard.
- Designed to increase up to 3 stages from the standard.

7. Latest operation

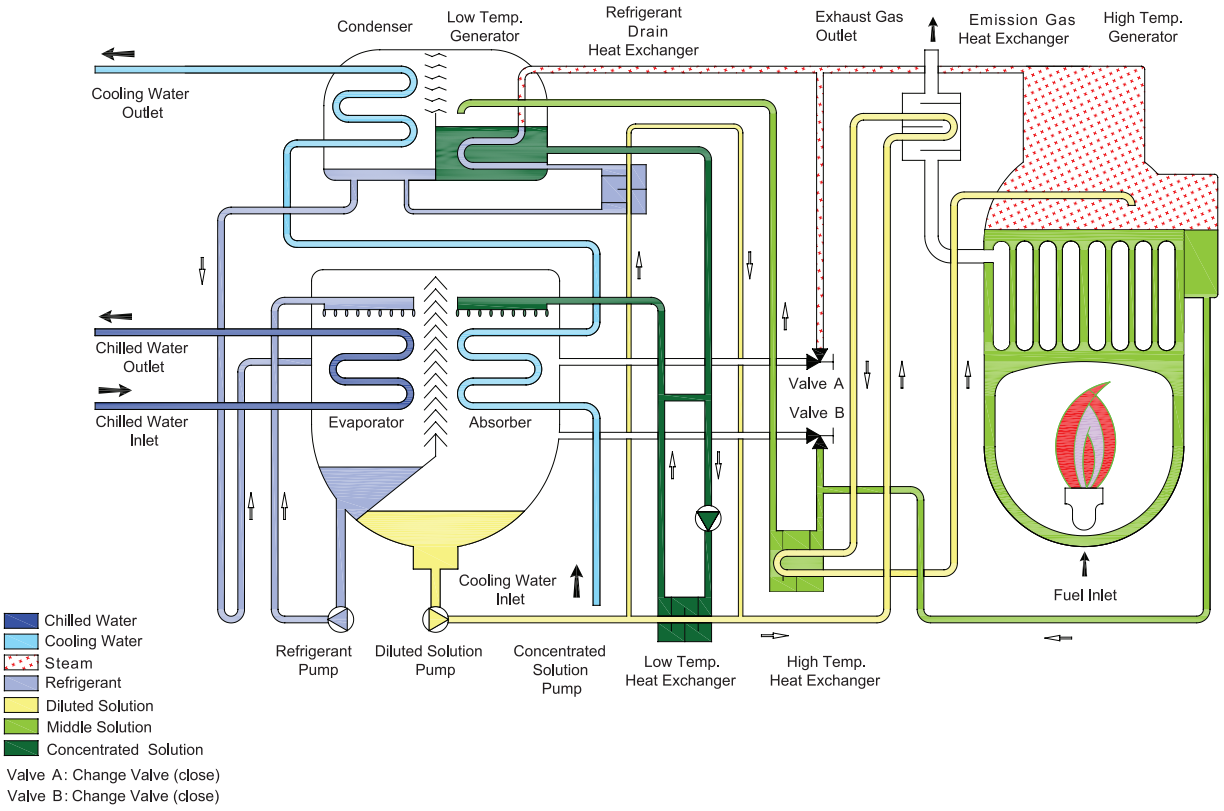
- Latest MICOM, remote control and BAS compatible.
- Self-diagnosis, 16-bit Micro Process to ensure precise and safe operation
- Simple operation. Easy MICO setting designed with algorithm allowing automatic operation
- Customer's convenience for operation due to remote control function along with the operating condition record and schedule operation

[Option] Monitoring system

CYCLE DIAGRAM

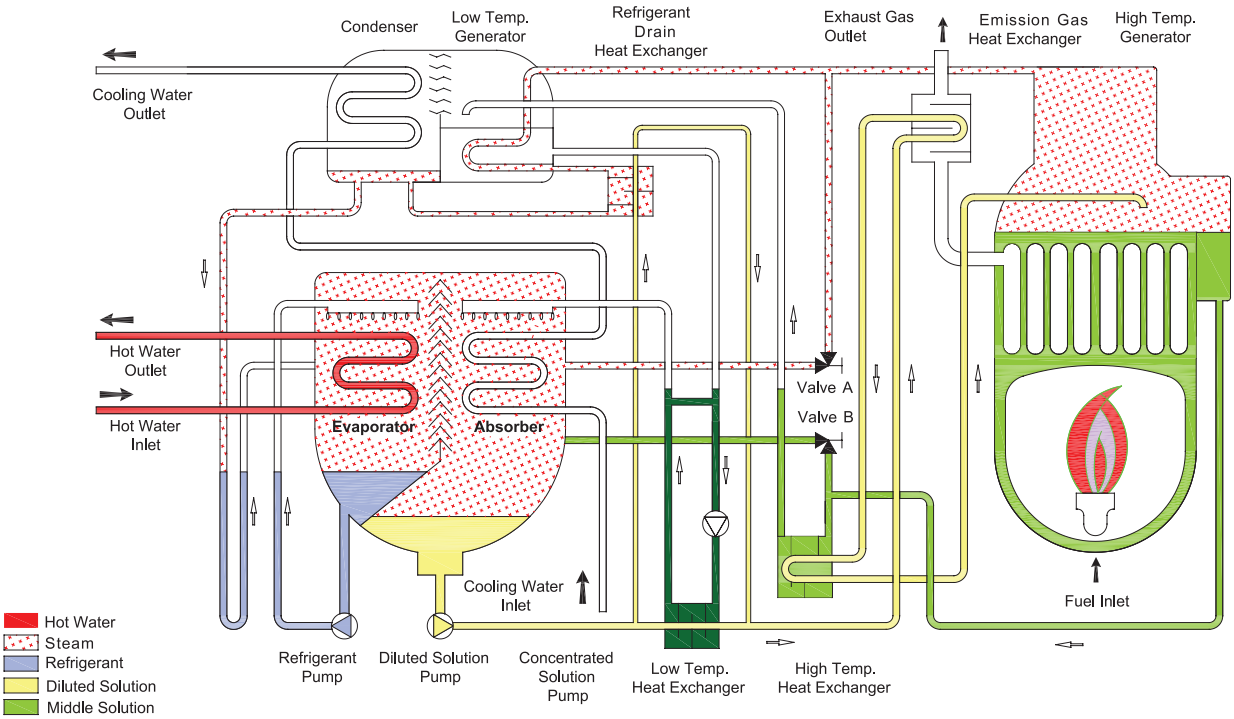
Double-Effect Direct Fired Absorption Chiller & Heater

Cooling Cycle Diagram



Valve A: Change Valve (close)
Valve B: Change Valve (close)

Heating Cycle Diagram



Valve A: Change Valve (open)
Valve B: Change Valve (open)

SPECIFICATION

Double-Effect Direct Fired Absorption Chiller & Heater - Normal Efficiency Model (KDA) - COP : 1.18

MODEL			UNIT	KDA 005	KDA 006	KDA 007	KDA 008	KDA 010	KDA 012	KDA 015	KDA 018	KDA 021	KDA 024	KDA 028
Cooling capacity			USRT	50	60	70	80	100	120	150	180	210	240	280
			kW	176	211	246	281	351	422	527	633	738	844	984
Heating Capacity			Mcal/h	151	181	212	242	302	363	454	544	635	726	847
			kW	176	211	246	281	351	422	527	633	738	844	984
Chilled & Hot Water	Temp.		℃	12 / 7℃ (Heating 55.6 / 60℃)										
	&		ton/h	30.2	36.3	42.3	48.4	60.5	72.6	90.7	108.9	127.9	145.2	169.3
	Hot		mAq	7.6	7.7	5.8	5.4	5.9	6.0	8.0	8.1	7.5	7.4	5.3
	Water		mm	80				100				125		
Cooling Water	Temp.		℃	32 / 37.5℃										
	Flow rate		ton/h	50	60	70	80	100	120	150	180	210	240	280
	P. Drop		mAq	3.5	3.7	8.2	7.7	3.3	3.5	9.6	10.1	5.8	4.7	8.7
	Connection		mm	100				125				150		
Fuel	Gas	Cooling	Nm /h	14.4	17.3	20.2	23.0	28.8	34.6	43.2	51.8	60.5	69.1	80.6
		Heating	Nm /h	17.1	20.5	23.9	27.4	34.2	41.0	51.3	61.6	71.8	82.1	95.8
		Connection	mAq	40(4.000mmAq)										
	Oil	Cooling	kg/h	14.8	17.8	20.8	23.7	29.6	35.6	44.5	53.4	62.3	71.2	83.0
		Heating	kg/h	17.6	21.1	24.6	28.2	35.2	42.3	52.8	63.4	73.9	84.5	98.6
		Connection	mm	10				15						
Electric	Power Source			3Ø 380 60Hz										
	Abs. Pump No. 1		kW(A)	1.2 (4.0)				2.0 (6.0)				2.4 (7.5)		3.0 (11.0)
	Abs. Pump No. 2		kW(A)	0.3 (1.6)				0.4 (1.6)				1.2 (4.5)		
	Ref. Pump		kW(A)					0.3 (1.5)						
	Purge Pump		kW(A)	0.4 (1.4)										
	Burner Blower		kW(A)	0.37 (1.0)		0.75 (2.1)					1.1(4.0)	1.5 (4.0)		1.8 (4.4)
	Oil Pump		kW(A)					0.24 (0.6)						
	Contorol Panel		kW(A)	0.2 (0.5)										
	Total Amp.	Gas	A	9.6		10.7		13.1						
		Oil	A	9.6		10.7		13.7						
Size	Length(L)		mm	2.900		3.400		2.632	2.832	3.644				
	Width(w)		mm	1.890		2.100		1.946		2.051	2.060	2.140		
	Height(H)		mm	2.220				2.024				2.381		
Weight	Rigging		Ton	2.7	2.9	3.1	3.5	3.8	4.0	4.9	5.3	6.1	7.2	7.7
	Operatin		Ton	3.0	3.2	3.4	3.8	4.6	4.8	5.8	6.4	7.5	7.8	8.7
Space for Tube Replacement			mm	2.000		2.400				3.400				

Note

1. 1 USRT = 3,024 kcal/h
2. Working Pressure of each water side is based on 1.0MPa (151 psig).
3. Nutural Gas LHV(Lower Heating Value) : 9,500kcal/Nm 3 , Diesel Oil LHV(Lower Heating Value) : 9,200kcal/kg.
4. Fouling factor 0.0001 m 2.h,'C/kcal for Absorber and Condenser, 0.0001 m 2 ·h·"C/kcal for Evaporator.
5. Catalogue specifications are subject to change without prior notice.

SPECIFICATION

Double-Effect Direct Fired Absorption Chiller & Heater - Normal Efficiency Model (KDA) - COP : 1.18

KDA 032	KDA 036	KDA 040	KDA 045	KDA 050	KDA 056	KDA 063	KDA 070	KDA 080	KDA 090	KDA 100	KDA 110	KDA 120	KDA 130	KDA 140	KDA 150
320	360	400	450	500	560	630	700	800	900	1000	1100	1200	1300	1400	1500
1.125	1.265	1.406	1.582	1.757	1.068	2.214	2.460	2.812	3.163	3.515	3.866	4.218	4.569	4.921	5.272
968	1089	1210	1361	1512	1693	1905	2117	2032	2286	2540	2794	3048	3302	3556	3810
1.125	1.265	1.406	1.582	1.757	1.968	2.214	2.460	2.362	2.657	2.952	3.248	3.543	3.838	4.133	4.428
12 / 7 C (Heating 55.6 / 60 C)															
320	360	400	450	500	560	630	700	800	900	1000	1100	1200	1300	1400	1500
5.1	5.7	5.9	5.1	5.3	4.2	5.7	7.6	5.5	7.4	9.7	7.4	9.4	11.7	9.4	11.5
150			200					250			300			350	
32 / 37.5 C															
320	360	400	450	500	560	630	700	800	900	1000	1100	1200	1300	1400	1500
8.8	8.9	8.8	8.6	8.7	6.4	8.8	11.7	9.1	12.3	16.2	12.3	15.7	7.2	12.8	15.7
200			250		300			350			400				
92.2	103.7	115.2	129.6	144.0	161.3	181.4	201.6	230.4	259.2	288.0	316.8	345.6	374.4	403.2	432.0
109.5	123.1	136.8	153.9	171.0	191.5	215.5	239.4	229.9	258.6	287.3	316.0	344.8	373.5	402.2	431.0
40(4.000mmAq)								50(4.000mmAq)							
94.9	106.7	118.6	133.4	1482	166.0	186.8	207.5	237.2	266.8	296.5	326.1	355.8	385.8	415.1	444.7
112.7	126.8	140.8	158.4	176.1	197.2	221.8	246.5	236.6	266.2	295.8	325.3	354.9	384.5	414.1	443.6
20											25				
3Ø 380 60Hz															
	3.4 (10.2)				5.5 (20.0)			6.6 (16.2)			7.5 (25.0)				
	1.2 (4.5)				2.0 (6.0)			2.2 (4.5)			4.5 (16.0)				
0.4 (15.0)								1.5 (4.0)							
0.4 (1.4)															
2.2 (5.0)		3.0 (6.5)			5.5 (13.0)			7.5 (15.8)			11.0 (22.7)				
0.55 (2.1)															
0.2 (0.5)															
37.4	37.1	38.6			55.9			44.9			69.6				
9.6	39.2	40.7			58.0			47.0			71.7				
4.720	4.860		4.910		5.040	5.580	6.080	5.720	6.220	6.740	6.150	6.670	7.170	6.830	7.330
	2.380		2.640		2.980			3.370			4.210			4.630	
	2.510		2.620		3.025			3.420			3.645			3.850	
8.3	10.3	10.5	12.6	12.8	18.1	19.6	21.0	27.9	30.2	32.6	37.8	40.7	43.2	47.5	50.0
9.3	11.7	12.1	14.5	14.8	20.7	22.3	24.0	31.8	34.3	37.0	42.1	45.2	48.1	52.7	55.6
2.400						5.200	5.700	5.200	5.700	6.200	5.700	6.200	6.700	6200	6.700

Note

1. 1 USRT = 3,024 kcal/h
2. Working Pressure of each water side is based on 1.0MPa (151 psig).
3. Nutural Gas LHV(Lower Heating Value) : 9,500kcal/Nm 3 , Diesel Oil LHV(Lower Heating Value) : 9,200kcal/kg.
4. Fouling factor 0.0001 m 2.h,'C/kcal for Absorber and Condenser, 0.0001 m 2 ·h·"C/kcal for Evaporator.
5. Catalogue specifications are subject to change without prior notice.

SPECIFICATION

Double-Effect Direct Fired Absorption Chiller & Heater - Middle Efficiency Model (KDAE) - COP : 1.364

MODEL			UNIT	KDAE 005	KDAE 006	KDAE 007	KDAE 008	KDAE 010	KDAE 012	KDAE 015
Cooling capacity			USRT	50	60	70	80	100	120	150
			kW	176	211	246	281	351	422	527
Heating Capacity			Mcal/h	133	160	186	213	266	319	399
			kW	155	186	217	247	309	371	464
Chilled & Hot Water	Temp.		℃	12 / 7 C . (Heating 55.6 / 60 C)						
	&		ton/h	30.2	36.3	42.3	48.4	60.5	72.6	90.7
	Hot		mAq	7.6	7.7	5.8	5.4	5.9	6.0	8.0
	Water		mm	80				100		
Chilled & Hot Water	Temp.		℃	32 / 37 C						
	Flow rate		ton/h	50	60	70	80	100	120	150
	P. Drop		mAq	3.5	3.7	8.2	7.7	3.3	3.5	9.6
	Connection		mm	100				125		
Fuel	Gas	Cooling	Nm /h	12.0	14.4	16.8	19.2	24.0	28.8	36.0
		Heating	Nm /h	15.0	18.1	21.1	24.1	30.1	36.1	45.1
		Connection	mAq	40 (4,000 mm Aq)						
	Oil	Cooling	kg/h	12.4	14.8	17.3	19.8	24.7	29.6	37.1
		Heating	kg/h	15.5	18.6	21.7	24.8	31.0	37.2	46.5
		Connection	mm	10				15		
Electric	Power Source			3 O 380V 60Hz						
	Abs. Pump No. 1		kW(A)	1.2 (4.0)				2.0 (6.0)		
	Abs. Pump No. 2		kW(A)	0.3 (1.6)				0.4 (1.6)		
	Ref. Pump		kW(A)	0.2 (1.1)				0.3 (1.5)		
	Purge Pump		kW(A)	0.4 (1.4)						
	Burner Blower		kW(A)	0.37 (1.0)		0.75 (2.1)				
	Oil Pump		kW(A)					0.24 (0.6)		
	Contorol Panel		kW(A)	0.2 (0.5)						
	Total Amp.	Gas	A	9.6		10.7		13.1		
		Oil	A	9.6		10.7		13.7		
Size	Length(L)		mm	2.900		3.400		2.633	2.832	
	Width(w)		mm	1.890		2.100		1.946		2.051
	Height(H)		mm	2.220						2.024
Weight	Rigging		Ton	2.8	3.0	3.3	3.7	4.0	4.2	5.1
	Operatin		Ton	3.2	3.4	3.6	4.0	4.8	5.0	6.1
Space for Tube Replacement			mm	2.000		2.400				3.400

Note
1. 1 USRT = 3,024 kcal/h
2. Working Pressure of each water side is based on 1.0MPa (151 psig).
3. Nutural Gas LHV(Lower Heating Value) : 9,500kcal/Nm 3 , Diesel Oil LHV(Lower Heating Value) : 9,200kcal/kg.
4. Fouling factor 0.0001 m 2.h,'C/kcal for Absorber and Condenser, 0.0001 m 2 ·h· "C/kcal for Evaporator.
5. Catalogue specifications are subject to change without prior notice.

SPECIFICATION

Double-Effect Direct Fired Absorption Chiller & Heater - Middle Efficiency Model (KDAE) - COP : 1.364

KDAE 017	KDAE 018	KDAE 021	KDAE 024	KDAE 028	KDAE 032	KDAE 036	KDAE 040	KDAE 045	KDAE 050
017	180	210	240	280	320	360	400	450	500
597	633	738	844	984	1.125	1.265	1.406	1.582	1.757
452	479	559	639	745	852	958	1064	1198	1331
626	557	650	742	866	990	1.113	1.237	1.392	1.546
		12 / 7 C. (Heating 55.6 / 60 C)							
102.8	108.9	127.0	145.2	169.3	193.5	217.7	241.9	272.2	302.4
8.0	8.1	7.5	7.4	5.3	5.2	5.7	5.9	5.1	5.3
100		125		150				200	
		32 / 37 C							
170	180	210	240	280	320	360	400	450	500
9.8	10.1	5.8	4.7	8.7	8.8	8.9	8.8	8.6	8.7
		150		200				250	
40.8	43.2	50.4	57.6	67.2	76.8	86.4	96.0	108.0	120.0
51.2	54.2	63.2	72.2	84.3	96.3	108.4	120.4	135.4	150.5
		40 (4,000 mm Aq)						50(4,000 mm Aq)	
42.0	44.5	51.9	59.3	69.2	79.1	88.9	98.8	111.2	123.5
52.7	55.8	65.1	74.4	86.8	99.2	111.5	123.9	139.4	154.9
		20							
		3 O 380V 60Hz							
		2.4 (7.5)		3.0 (11.0)		3.4 (10.2)			
		1.2 (4.5)				1.5 (5.0)			
		0.4 (15.0)							
		0.4 (1.4)							
1.1 (4.0)		1.5 (4.0)		3.0 (11.0)		2.2 (5.0)		3.0 (6.5)	
0.55 (2.1)		0.4 (15.0)							
		0.2 (0.5)							
15.0		32.9		36.8	37.4	37.1		38.6	
17.1		35.0		38.9	39.5	39.2		40.7	
3.644		3.670		4.720		4.860		4.910	
2.060		2.140				2.380		2.640	
		2.381				2.510		2.620	
5.4	5.6	6.4	7.6	8.1	8.7	10.8	11.0	13.2	13.4
6.5	6.7	7.9	8.2	9.1	9.8	12.3	12.7	15.2	15.5
3.400		3.400		4.500					

Note

1. 1 USRT = 3,024 kcal/h
2. Working Pressure of each water side is based on 1.0MPa (151 psig).
3. Nutural Gas LHV(Lower Heating Value) : 9,500kcal/Nm 3 , Diesel Oil LHV(Lower Heating Value) : 9,200kcal/kg.
4. Fouling factor 0.0001 m 2.h,'C/kcal for Absorber and Condenser, 0.0001 m 2 ·h·"C/kcal for Evaporator.
5. Catalogue specifications are subject to change without prior notice.

SPECIFICATION

Double-Effect Direct Fired Absorption Chiller & Heater - High Efficiency Model (KDAH) - COP : 1.51

MODEL		UNIT	KDAH 010		KDAH 013		KDAH 016		KDAH 020		KDAH 025		KDAH 030	
Cooling capacity		USRT	92	100	120	130	147	160	184	200	230	250	276	300
		kW	323	351	420	457	517	562	647	703	808	879	970	1.054
Heating Capacity		Mcal/h	245	265	506	344	623	423	779	529	974	662	1168	794
		kW	285	308	588	400	724	492	905	615	1.132	769	1.358	923
Chilled & Hot Water	Temp.	˚C	12/7˚C	15/7˚C	12/7˚C	15/7˚C	12/7˚C	15/7˚C	12/7˚C	15/7˚C	12/7˚C	15/7˚C	12/7˚C	15/7˚C
	&	ton/h	55.6	37.8	72.3	49.1	89.0	60.5	111.3	75.6	139.1	94.5	166.9	113.4
	Hot	mAq	10.3	10.8	10.5	11.3	11.8	10.4	7.5	10.4	11.4	10.0	11.3	10.4
	Water	mm	100	80	100	80	125	100	125	100	150	125	150	125
Cooling Water	Temp.	˚C	32 / 37˚C											
	Flow rate	ton/h	92	100	120	130	147	160	184	200	230	250	276	300
	P. Drop	mAq	7.9	4.8	8.1	5.3	6.0	7.2	6.3	7.8	5.7	6.9	4.9	6.0
	Connection	mm	100				150				200			
Fuel	Cooling	Nm /h	18.7	20.4	24.4	26.5	30.0	32.6	37.5	40.7	46.8	50.9	56.2	61.1
	Heating	Nm /h	29.4	31.7	60.7	41.3	74.8	50.7	93.5	63.5	116.8	79.4	140.2	95.3
	Connection	mAq	40(4.000mmAq)											
Electric	Power Source		3Ø 400V 50Hz											
	Abs. Pump No. 1	kW(A)	1.2 (4.0)				2.2 (5.5)				3.0 (11.0)			
	Abs. Pump No. 2	kW(A)	0.3 (1.4)								0.75(2.5)			
	Ref. Pump	kW(A)	0.2 (1.1)										0.4 (1.5)	
	Purge Pump	kW(A)	0.4 (1.4)											
	Burner Blower	kW(A)	0.75(2.1)						1.1(4.0)				1.5 (4.0)	
	Contorol Panel	kW(A)	0.2 (0.5)											
	Total Amp.	A	10.9				12.3		14.2		20.8		20.9	
Size	Length(L)	mm	3.300		3.354		4042				4440		4601	
	Width(w)	mm	2.120		2.210		2.180		2.800		2850		3050	
	Height(H)	mm	2.535		2.655		2.535		2.565		2.705		2.906	
Weight	Rigging	Ton	6.0		6.8		8.1		8.8		10.6		13.1	
	Operatin	Ton	6.7		7.5		9.0		9.9		12.3		15.1	
Space for Tube Replacement		mm	2.600				3.700							

Note
1. 1 USRT = 3,024 kcal/h
2. Working Pressure of each water side is based on 1.0MPa (151 psig).
3. Nutural Gas LHV(Lower Heating Value) : 9,500kcal/Nm 3 , Diesel Oil LHV(Lower Heating Value) : 9,200kcal/kg.
4. Fouling factor 0.0001 m 2.h,˚C/kcal for Absorber and Condenser, 0.0001 m 2 ·h· ˚C/kcal for Evaporator.
5. Catalogue specifications are subject to change without prior notice.

SPECIFICATION

Double-Effect Direct Fired Absorption Chiller & Heater - High Efficiency Model (KDAH) - COP : 1.51

KDAH 036		KDAH 040		KDAH 045		KDAH 050		KDAH 056		KDAH 063		KDAH 070		KDAH 080	
331	360	368	400	414	450	460	500	515	560	580	630	644	700	736	800
1.164	1.265	1.293	1.406	1.455	1.582	1.617	1.757	1.811	1.968	2.037	2.214	2.263	2.460	2.587	2.812
1402	953	1558	1058	1753	1191	1947	1323	2118	1482	2454	1667	2726	1852	3116	2117
1402	953	1558	1058	1753	1191	1947	1323	2118	1482	2454	1667	2726	1852	3116	2117
12/7˚C	15/7˚C	12/7˚C	15/7˚C	12/7˚C	15/7˚C	12/7˚C	15/7˚C	12/7˚C	15/7˚C	12/7˚C	15/7˚C	12/7˚C	15/7˚C	12/7˚C	15/7˚C
200.3	136.1	222.6	151.2	250.4	170.1	278.2	189.0	311.6	211.7	350.5	238.1	389.5	264.6	455.1	302.4
13.2	13.0	13.3	13.1	11.1	13.0	11.3	13.1	8.2	9.0	11.0	12.1	14.4	15.8	12.3	14.3
200	150	200	150	200	150	200	150	200	200	200	200	200	200	250	200
32 / 37˚C															
331	360	368	400	414	450	460	500	515	560	580	630	644	700	736	800
9.1	5.8	9.2	6.0	8.5	10.3	8.8	10.7	5.6	6.7	7.5	9.0	9.8	11.9	8.7	10.6
250	250							300							
67.5	73.3	74.9	81.5	84.3	91.6	93.7	101.8	104.9	114.0	118.0	128.3	131.1	142.5	149.9	162.9
168.2	114.3	186.9	127.0	210.3	142.8	233.8	158.7	261.7	177.8	294.4	200.0	327.1	222.2	373.8	253.9
40(4.000mmAq)						50(4.000mmAq)									
3Ø 400V 50Hz															
3.4(10.2)				2.5(15.0)						6.6(21.0)					
0.75(2.5)				2.2(5.5)										3.0(11.0)	
2.2(5.5)												1.5(3.9)			
0.4(1.4)															
2.2(5.0)				3.7(8.1)						5.5(13.0)					
0.2 (0.5)															
21.1				32.0						42.9		45.3		50.8	
5.397				6.493				6.074		6.662		7160			
3.010		3.016		2.770		2.840		3.200		3,240		3.370		3550	
2.886		2.858		3.016				2.535				2.705		2.906	
15.1		17.1		19.0		20.0		32.2		24.7		27.3		31.0	
17.2		19.4		21.5		22.6		26.7		28.4		31.2		35.5	
4700				5700				5200		5700			6800		

Note

1. 1 USRT = 3,024 kcal/h
2. Working Pressure of each water side is based on 1.0MPa (151 psig).
3. Nutural Gas LHV(Lower Heating Value) : 9,500kcal/Nm 3 , Diesel Oil LHV(Lower Heating Value) : 9,200kcal/kg.
4. Fouling factor 0.0001 m 2.h, ‘C/kcal for Absorber and Condenser, 0.0001 m 2 ·h·“C/kcal for Evaporator.
5. Catalogue specifications are subject to change without prior notice.

Note

Note


KELVIN
Air Conditioning System