BDHA

Chilled Water Air Handling Units

2,000 - 8,000 CFM 50 Hz

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Model Nomenclature

BD H A 40 B 0 1 R 0 0

Product Type
BD = Belt Driven
(Cooling Only)

Airflow Configuration
C = Convertible
H = Horizontal

Configuration
A,B = Development Sequence

Size / Nominal Airflow

20 = 2,000 CFM	50 = 5,000 CFM
25 = 2,500 CFM	60 = 6,000 CFM
34 = 3,400 CFM	70 = 7,000 CFM
40 = 4,000 CFM	80 = 8,000 CFM

Minor Design Sequence
A = First Design
B = Second Design
C = Thi rd Design

Factory Installed Options
0 = No Option
A = 1 Hp Fan Motor
B = 2 Hp Fan Motor
C = 3 Hp Fan Motor
D = 5 Hp Fan Motor
E = 7.5 Hp Fan Motor

Electrical Characteristics
1 = 380-415V/50 Hz/3 PH

Coil Connection
R = Right Hand Connection
L = Left Hand Connection

Coil Row
0 = Standa rd 3- row coil
4 = Optional 4- row coil

Future Used
0 = None

General Data

Product Specification

MODEL		BDHA20	BDHA25	BDHA34	BDHA40	BDHA50	BDHA60	BDHA70	BDHA80
Rated - Volts/Ph/Hz		380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
SYSTEM DATA									
Nominal Airflow	CFM	2,000	2,500	3,400	4,000	5,000	6,000	7,000	8,000
Nominal Capacity	MBH	60	75	100	120	160	180	210	240
Water Inlet Connection Size	in	1 1/4	1 1/4	1 1/4	1 1/2	2	2	2	2
Water Outlet Connection Size	in	1 1/4	1 1/4	1 1/4	1 1/2	2	2	2	2
Water Connection Type		Steel Pipe - MPT							
COIL									
Fin Type		Slit Uncoated	Slit Uncoated	Slit Uncoated	Slit Uncoated	Slit Uncoated	Slit Uncoated	Slit Uncoated	Slit Uncoated
Fins per inch*									
3-Row coil		14	14	14	14	14	14	14	14
4-Row coil		12	13	14	13	14	14	14	14
Drain Connection Size	in	1	1	1	1	1	1	1	1
FAN									
Fan Type		Double Inlet Centrifugal Forward Curved Wheel							
Dai. x Width		10 x 10	10 x 10	10 x 8	10 x 10	12 x 12	12 x 12	15 x 15	15 x 15
No. used		1	1	2	2	2	2	2	2
Drive Type		Adjustable Belt Drive							
FAN MOTOR									
Qty of Motor		1	1	1	1	1	1	1	1
Motor Output	hp (kW)	3/4 (0.55)	1 (0.75)	2 (1.5)	2 (1.5)	2 (1.5)	3 (2.2)	3 (2.2)	5 (3.7)
No. of Speed		1	1	1	1	1	1	1	1
V/ph/Hz		380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
RLA/LRA		1.61/8.4	1.99/11.0	3.66/21.0	3.66/21.0	3.66/21.0	5.08/34.0	5.08/34.0	8.03/63.0
RETURN FILTER									
Filter Type		Washable Air Filter							
DIMENSION (HxWxD)									
Packing (Shipping)	mm	673 x 1,410 x 970	673 x 1,410 x 970	673 x 1,778 x 970	772 x 1,778 x 970	920 x 2,152 x 994	920 x 2,152 x 994	980 x 2,470 x 1,325	980 x 2,470 x 1,325
Unit (Net)	mm	520 x 1,406 x 916	520 x 1,406 x 916	520 x 1,774 x 916	620 x 1,774 x 916	798 x 2,059 x 1,260	798 x 2,059 x 1,260	850 x 2,366 x 1,320	850 x 2,366 x 1,320
WEIGHT									
Unit (Net) 3-Row Coil	kg	90	92	139	141	181	190	214	240
Unit (Net) 4-Row Coil	kg	92	96	145	148	191	201	226	235

*Note : 1. 3-Row coil is standard coil
2. 4-Row coil is optional coil

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Performance Data
Cooling Capacities
Model BDHA

Cooling Capacity for 3-Row Coil

TC = Total Capacit y, MBH
SC = Sensible Capacit y, MBH
GPM = Water Flow Rate, gpm
PD = Water P ressu re D rop, Ft of Water
EWT = Entering Water Temperatu re
WTR = Water Temperatu re Rise

EWT (F)	Unit Size	Rated Airflow CFM	WTR (F)	Entering Air Temp - EDB/EWB (F) 72/61 TC	SC	GPM	PD	74/63 TC	SC	GPM	PD	80/67 TC	SC	GPM	PD	84/71 TC	SC	GPM	PD
40	20	2000	8	57.16	42.51	14.23	8.21	66.59	45.55	16.58	10.71	86.70	55.20	21.59	16.98	108.70	61.09	27.06	25.23
			10	51.09	39.84	10.18	4.56	60.02	42.68	11.95	6.03	80.18	52.41	15.97	9.98	102.10	58.31	20.35	15.23
			12	44.55	37.06	7.40	2.61	53.17	39.80	8.83	3.54	73.21	49.52	12.15	6.17	95.30	55.51	15.82	9.76
			15	33.09	32.40	4.40	1.05	41.51	35.11	5.51	1.55	62.31	45.16	8.28	3.14	84.16	51.13	11.18	5.29
	25	2500	8	69.39	52.00	17.27	12.73	80.71	55.66	20.09	16.57	104.80	67.35	26.09	26.18	131.10	74.38	32.65	38.80
			10	62.65	49.04	12.48	7.18	73.10	52.35	14.56	9.40	97.19	64.07	19.36	15.44	123.50	71.15	24.60	23.48
			12	55.79	46.09	9.26	4.26	65.77	49.23	10.92	5.66	89.15	60.71	14.80	9.61	115.50	67.87	19.17	15.11
			15	44.54	41.42	5.92	1.94	53.91	44.38	7.16	2.70	77.40	55.99	10.28	5.06	102.70	62.79	13.65	8.28
	34	3400	8	93.94	71.64	23.39	12.85	108.00	76.77	27.10	16.61	140.00	93.22	34.85	25.79	173.80	103.29	43.27	37.70
			10	84.83	67.55	16.90	7.25	98.71	72.23	19.66	9.44	130.00	88.72	25.88	15.25	163.80	98.87	32.63	22.87
			12	75.15	63.30	12.47	4.26	88.61	67.84	14.71	5.67	119.30	84.11	19.81	9.51	153.40	94.33	25.46	14.74
			15	58.13	56.15	7.72	1.84	71.38	60.61	9.48	2.63	103.30	77.40	13.72	4.98	136.70	87.32	18.15	8.11
	40	4000	8	113.70	87.06	28.31	9.88	131.40	93.09	32.71	12.71	169.00	113.01	42.00	19.74	209.90	125.08	52.24	28.84
			10	102.50	82.07	20.42	5.57	119.30	87.71	23.76	7.24	156.70	107.55	31.22	11.65	197.37	119.65	39.37	17.48
			12	90.30	76.73	14.99	3.24	106.70	82.24	17.71	4.32	144.00	101.99	23.90	7.28	184.90	114.14	30.69	11.25
			15	67.80	67.31	9.01	1.33	84.49	72.96	11.22	1.94	124.00	93.70	16.48	3.78	164.10	105.55	21.80	6.15
	50	5000	8	149.70	112.35	37.26	10.84	172.80	120.38	43.02	13.93	221.00	145.82	55.03	21.41	273.30	161.45	68.05	31.06
			10	136.00	106.17	27.09	6.19	158.00	113.65	31.47	8.04	206.60	139.26	41.15	12.82	259.10	154.99	51.61	19.04
			12	121.20	99.60	20.12	3.68	142.70	106.93	23.69	4.88	191.20	132.42	31.74	8.11	244.10	148.37	40.52	12.42
			15	95.90	88.81	12.74	1.65	116.80	95.86	15.51	2.32	166.80	122.01	22.15	4.31	219.60	137.96	29.17	6.95
	60	6000	8	172.40	130.85	42.91	15.23	198.60	139.83	49.45	19.51	253.70	169.06	63.16	29.93	313.50	186.58	78.04	43.38
			10	157.60	124.21	31.39	8.79	182.20	132.48	36.29	11.31	237.40	161.71	47.28	17.94	297.30	179.35	59.21	26.60
			12	142.40	117.51	23.64	5.34	166.10	125.38	27.57	6.98	220.10	154.16	36.53	11.38	280.30	171.93	46.53	17.36
			15	117.40	106.83	15.59	2.58	139.90	114.25	18.58	3.49	194.60	143.35	25.84	6.18	252.90	160.47	33.60	9.76
	70	7000	8	198.00	151.06	49.29	13.41	228.30	161.39	56.82	17.18	292.10	195.19	72.71	26.44	361.20	215.47	89.93	38.40
			10	180.50	143.17	35.95	7.70	208.90	152.74	41.61	9.93	272.70	186.53	54.31	15.79	342.00	206.96	68.11	23.47
			12	161.90	135.04	26.88	4.62	189.50	144.23	31.46	6.08	252.20	177.65	41.87	9.98	321.80	198.23	53.42	15.27
			15	129.70	121.37	17.23	2.12	156.80	130.41	20.82	2.95	221.60	164.74	29.43	5.37	289.40	184.63	38.44	8.54
	80	8000	8	224.80	170.91	55.96	17.20	259.50	182.80	64.61	22.11	332.10	221.17	82.67	34.04	410.80	244.34	102.30	49.46
			10	205.00	161.97	40.84	9.88	237.30	172.82	47.27	12.74	310.20	211.36	61.78	20.33	389.00	234.71	77.49	30.24
			12	185.20	153.20	30.74	6.00	216.10	163.53	35.87	7.84	287.00	201.20	47.63	12.85	366.30	224.81	60.80	19.67
			15	152.00	139.05	20.19	2.87	181.60	148.86	24.12	3.91	253.10	186.88	33.61	6.95	329.70	209.45	43.79	11.01
43	20	2000	8	47.19	38.19	11.75	5.81	55.74	40.88	13.88	7.77	75.69	50.54	18.85	13.24	97.59	56.44	24.30	20.66
			10	41.51	35.81	8.27	3.14	49.55	38.32	9.87	4.27	68.84	47.74	13.72	7.56	90.76	53.69	18.08	12.25
			12	35.44	33.33	5.89	1.73	42.95	35.67	7.13	2.42	62.22	45.14	10.33	4.60	83.55	50.89	13.87	7.68
			15	23.86	23.54	3.17	0.59	31.55	30.10	4.19	0.96	51.60	41.10	6.86	2.24	71.81	46.50	9.54	3.97
	25	2500	8	57.44	46.79	14.30	9.05	67.65	50.02	16.85	12.04	91.55	61.71	22.80	20.42	117.80	68.79	29.33	31.77
			10	51.37	44.24	10.24	5.03	60.72	47.14	12.10	6.73	83.54	58.43	16.65	11.72	109.80	65.56	21.87	18.90
			12	45.08	41.64	7.49	2.91	53.79	44.32	8.93	3.95	76.05	55.44	12.63	7.21	101.40	62.28	16.84	11.90
			15	34.40	32.74	4.57	1.23	42.56	39.90	5.66	1.78	64.86	51.13	8.62	3.68	88.16	57.29	11.71	6.28
	34	3400	8	77.82	64.48	19.38	9.15	91.30	69.02	22.74	12.08	122.40	85.40	30.47	20.14	156.20	95.51	38.89	30.90
			10	69.42	60.87	13.83	5.06	81.98	65.04	16.33	6.76	111.80	80.90	22.28	11.60	145.80	91.08	29.04	18.43
			12	60.35	57.07	10.02	2.88	72.22	60.98	11.99	3.93	101.90	76.80	16.91	7.14	134.80	86.54	22.38	11.63
			15	38.51	37.97	5.14	1.00	55.28	54.15	7.35	1.67	86.23	70.53	11.46	3.60	117.30	79.61	15.58	6.15
	40	4000	8	94.37	78.51	23.50	7.06	110.50	83.85	27.51	9.29	147.60	103.55	36.76	15.40	188.40	115.70	46.93	23.62
			10	83.87	74.00	16.71	3.88	99.10	79.03	19.74	5.19	135.00	98.26	26.91	8.89	175.70	110.28	35.00	14.07
			12	72.29	69.14	12.00	2.18	86.78	73.91	14.41	2.99	123.00	93.27	20.43	5.47	162.20	104.77	26.94	8.86
			15	62.75	61.85	8.37	0.87	64.42	60.63	8.56	1.20	103.30	85.41	13.73	2.72	141.00	96.39	18.74	4.67
	50	5000	8	124.40	101.01	30.97	7.76	145.70	108.17	36.28	10.22	193.90	133.62	48.28	16.83	246.20	149.30	61.32	25.58
			10	111.40	95.37	22.20	4.33	131.60	102.15	26.23	5.78	178.60	127.00	35.58	9.83	231.30	142.84	46.08	15.44
			12	97.53	89.51	16.20	2.49	116.60	95.86	19.37	3.40	163.70	120.76	27.18	6.12	215.40	136.17	35.76	9.87
			15	72.67	70.69	9.66	1.01	91.33	85.55	12.14	1.50	139.70	111.05	18.57	3.14	189.30	125.64	25.15	5.31
	60	6000	8	143.60	118.03	35.75	10.94	167.60	126.03	41.73	14.33	222.40	222.40	55.37	23.49	282.10	172.71	70.24	35.65
			10	130.10	112.17	25.91	6.22	152.40	119.52	30.37	8.20	205.30	147.84	40.90	13.77	265.10	165.55	52.83	21.53
			12	115.90	106.24	19.25	3.70	137.00	113.08	22.75	4.94	189.10	141.07	31.40	8.64	247.20	158.13	41.05	13.78
			15	92.19	89.84	12.25	1.68	111.90	102.86	14.87	2.35	164.30	131.11	21.84	4.56	218.80	146.80	29.07	7.50
	70	7000	8	164.80	136.41	41.04	9.63	192.40	145.52	47.91	12.61	255.70	179.17	63.67	20.71	324.80	199.44	80.88	31.51
			10	148.60	129.34	29.61	5.43	174.50	137.85	34.77	7.18	235.60	170.58	46.93	12.10	304.70	190.94	60.71	18.96
			12	131.10	121.98	21.77	3.17	155.70	130.03	25.86	4.27	216.40	162.61	35.94	7.56	283.40	182.20	47.06	12.10
			15	99.35	94.56	13.25	1.38	123.60	117.04	16.42	1.93	186.40	150.61	24.77	3.93	249.90	168.91	33.20	6.54
	80	8000	8	186.90	153.98	46.54	12.32	218.50	164.57	54.42	16.18	290.80	202.94	72.43	26.68	369.50	226.20	92.02	40.61
			10	169.10	146.26	33.70	6.98	198.20	155.89	39.49	9.20	267.80	193.04	53.35	15.55	346.80	216.48	24.45	8.64
			12	150.60	138.53	25.01	4.14	178.10	147.47	29.57	5.54	245.90	183.93	40.84	9.71	322.80	206.58	53.60	15.60
			15	118.70	115.53	15.78	1.85	144.90	133.93	19.26	2.61	213.60	170.91	28.38	5.12	284.60	191.39	37.82	8.43
45	20	2000	8	40.92	35.57	10.19	4.50	48.77	38.00	12.15	6.11	68.01	47.41	16.94	10.90	89.99	53.34	22.39	17.76
			10	35.70	33.44	7.11	2.40	42.88	35.63	8.55	3.30	61.49	44.85	12.25	6.17	82.82	50.60	16.51	10.37
			12	30.03	28.67	4.99	1.29	36.64	33.20	6.09	1.82	55.07	42.38	1.95	3.69	75.33	47.78	12.51	6.36
			15	17.59	17.36	2.34	0.35	25.21	24.82	3.35	0.64	44.87	38.63	5.97	1.74	63.75	43.62	8.47	3.21
	25	2500	8	50.02	43.67	12.46	7.06	59.28	46.55	14.77	9.49	82.33	57.94	20.51	16.83	108.50	65.05	27.02	27.31
			10	44.49	41.42	8.87	3.89	52.88	43.97	10.54	5.25	75.21	54.90	15.04	9.57	100.20	61.85	19.98	16.01
			12	38.69	36.97	6.43	2.22	46.38	41.39	7.70	3.03	67.63	52.19	11.23	5.83	91.53	58.54	15.20	9.88
			15	28.15	27.78	3.74	0.86	35.62	33.88	4.74	1.30	56.97	48.20	7.57	2.92	78.73	53.87	10.47	5.12
	34	3400	8	67.76	60.17	16.88	7.13	80.05	64.23	19.94	9.54	110.10	80.20	27.42	16.62	143.90	90.31	35.85	26.58
			10	60.00	56.92	11.96	3.90	71.31	60.57	14.21	5.26	100.30	76.03	19.94	9.48	133.20	85.88	26.54	15.62
			12	51.48	50.13	8.55	2.17	62.02	56.85	10.30	3.00	90.52	72.23	15.04	5.77	121.70	81.34	20.22	9.67
			15	25.71	25.49	3.43	0.44	44.43	44.30	5.91	1.14	75.43	66.37	10.03	2.84	104.60	74.78	13.91	5.00
	40	4000	8	82.22	73.30	20.48	5.51	97.00	78.16	24.16	7.35	132.80	97.30	33.08	12.71	173.60	109.41	43.23	20.30
			10	72.43	69.18	14.44	2.99	86.16	73.65	17.17	4.04	121.00	92.44	24.12	7.29	160.40	104.03	31.97	11.91
			12	61.44	59.85	10.21	1.63	74.36	68.92	12.35	2.27	109.30	87.75	18.16	4.43	146.50	98.52	24.34	7.37
			15	31.95	30.38	4.25	0.36	53.28	52.08	7.10	0.93	90.19	80.38	11.99	2.14	125.70	90.62	16.71	3.80
	50	5000	8	108.30	94.02	26.97	6.05	128.10	100.63	31.90	8.10	174.90	125.43	43.57	13.96	227.40	141.21	56.64	22.09
			10	96.23	88.97	19.18	3.33	114.60	94.99	22.84	4.51	160.20	119.30	31.93	8.08	211.90	134.76	42.23	13.15
			12	83.25	81.10	13.83	1.88	100.30	89.13	16.66	2.60	145.70	113.38	24.20	4.96	195.30	128.03	32.44	8.26
			15	57.77	56.47	7.68	0.68	70.33	66.46	9.38	1.04	122.40	104.27	16.27	2.48	169.30	117.94	22.51	4.34
	60	6000	8	125.50	110.21	31.25	8.59	147.50	117.44	36.75	11.39	200.60	145.82	49.96	19.46	260.30	163.53	64.84	30.74
			10	113.00	105.01	22.53	4.84	133.30	111.58	26.57	6.45	184.30	139.12	36.74	11.32	242.80	156.31	48.39	18.32
			12	99.93	99.60	16.60	2.84	118.70	105.59	19.72	3.82	168.80	132.87	28.05	7.04	224.10	148.88	37.23	11.53
			15	76.72	74.28	10.20	1.21	94.71	92.70	12.59	1.75	145.10	123.56	19.28	3.65	196.50	138.21	26.11	6.18
	70	7000	8	144.00	127.37	35.86	7.55	169.30	135.65	42.17	10.01	230.00	168.38	57.39	17.14	299.60	188.81	74.61	27.14
			10	128.90	121.06	25.70	4.21	152.40	128.66	30.38	5.63	211.40	160.56	42.13	9.94	278.70	180.31	55.56	16.12
			12	112.50	109.75	18.69	2.41	134.50	121.37	22.34	3.29	193.10	153.19	32.07	6.15	256.60	171.57	42.63	10.10
			15	79.12	76.63	10.52	0.89	92.47	88.33	12.33	1.29	164.00	141.87	21.80	3.12	223.90	158.96	29.76	5.37
	80	8000	8	163.20	143.74	40.64	9.65	192.10	153.29	47.86	12.83	262.20	190.70	65.31	22.08	340.90	214.05	84.92	35.00
			10	147.00	136.97	29.29	5.43	173.30	145.48	34.55	7.24	240.10	181.59	47.86	12.76	317.40	204.41	63.26	20.79
			12	129.70	122.91	21.55	3.17	154.30	137.75	25.63	4.29	219.50	173.25	36.46	7.10	292.40	194.43	48.57	13.03
			15	97.98	94.70	13.02	1.32	122.20	119.44	16.24	1.93	188.50	161.10	25.05	4.09	255.40	180.11	33.95	6.93

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Features and Benefits

BDCB Model (Option)

BDHA Model

Proportional Thermostat (Option)

TPICCV Valve (Option)

Trane Cont rol Valve (Option)

AHU Starter Panel (Option)

Flexibility

Wide performace range availability with 4-row coil option helps increase application variety. Compact size unit allows it to be properly fit in the field.

BDHA unit is the general model for horizontal airflow application and BDCB unit is the optional model for BDHA40-80 vertical airflow application.

Low Installation Cost

The unit shipped from factory with necessary accessories for operation make it inexpensive to install.

General

Air handler units shall be completely factory assembled including coil, condensate drain pan, fan motor(s), filters in an insulated casing dedicated for horizontal application of BDHA model. Unit shall be rated in accordance with ARI Standard 210.

Unit casing

Units casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized and finished with a polyester powder painted and weather resistant baked enamel finish. Casing is completely insulated with fire-retardant, permanent, odorless Polyethylene foam.

Fans

Fans are double width, double inlet, multiblade centrifugal type. All fans statically and dynamically balanced and tested after being installed on properly sized hollow or solid shafts. Fan shafts do not pass through their first critical speed as unit comes up to rated rpm.

Fan housings constructed with dieformed, streamlined inlets and side sheets. Fan bearings are grease lubricated ball bearings selected for 200,000 hours average life.

Coils

Configured aluminium fin surface shall be mechanically bonded to internally enhanced copper tube and factory pressure and leak tested at 380 psig. Coil is arranged for draw through airflow and shall provide polyester powder painted drain pan constructed of galvanized steel with rubber insulator for BDHA.

Filter

1-inch, washable aluminium fiter shall be standardon air handlers. Filters shall be accessible from theside coil panel.

Fan Motor

Motor bearings shall be permanently lubricated. oversized motor shall be available as an option for high static application.

Accessories

Oversized Motor

Field installed oversized motors shall be available for hight static pressure applications.

Discharge Plenum

Accessory discharge plenum shall be available for free blow.

Option

Trane Proportional Thermostat

monitors the adjustable control valve by 0-10 Vdc signal, 5 °C - 34 °C temperature setting and connectable with external sensor.

"TPICCV" Trane Pressure Independent Characterized Control Valves (Option-5 Years Warranty)

combines a differential pressure egulator with a 2-way control valve which suppliesa specific constant flow for each degree of valve opening regardless of pressure variation in the system. Recommend to use with Trane Thermostatfor precise temperature control.

Trane Control Valve

controls the opening and closing of the pipe in the HVAC system for room temperature monitor. Recommend to use with Trane Thermostat for precise temperature control.

*Control valve option cannot be factory installed inside unit. It will be provided separately.

Trane AHU Starter Panel

particularly controls the HVAC system. Integrated with motor and compressor protection system, reliable according to UL/IEC/NEMA standard and easy to install.

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บริษัท บี.เค.แอร์ซัพพลาย จำกัด
B.K. AIRSUPPLY CO.,LTD.
611,613 ถนนพระราม 3 แขวงบางโพงพาง เขตยานนาวา กรุงเทพฯ 10120
611,613 Rama3 Rd. Bangpongpang, Yannava, Bangkok 10120
Tel : 02-284-2826, 02-294-5260, 02-294-5261, 02-294-2972
Fax : 02-294-2973

www.bkairsupply.com