

# OPTIONAL ACCESSORIES

- ❁ Economizer
- ❁ Suction stop valve(s), discharge stop valve(s) and liquid stop valve(s).
- ❁ EC evaporator blower, EC condenser axial fan.
- ❁ Thermostat.
- ❁ MODBUS RS485
- ❁ Hydrophilic fins or copper fins for better corrosion resistance.
- ❁ Hot water heating coils.
- ❁ Electric heaters.

## COOLING & HEATING PORTFOLIO

### COOLING ONLY

Reference		Capacity MBH
AP.BDQTH015AH	Cooling	169.3
AP.BDQTH025AH	Cooling	259.7
AP.BDQTH035AH	Cooling	391.3
AP.BDQTH045AH	Cooling	527.9
AP.BDQTH055AH	Cooling	660.5
AP.BDQTH080AH	Cooling	921.1

Notes: 1) Ratings Are Gross Capacities - For Net Capacities, Deduct Evaporator Blower Motor Heat.  
 2) Ratings are based on nominal airflow with on evaporator dry/wet bulb temperatures of 80/67°F (27/19.4°C) and condenser entering air temperature of 95°F(35°C)

### HEAT PUMP

Reference		Capacity MBH
AP.BDQTH015AYQH	Cooling	169.3
	Heating	180.4
AP.BDQTH025AYQH	Cooling	259.7
	Heating	264.1
AP.BDQTH035AYQH	Cooling	390.9
	Heating	409.6
AP.BDQTH045AYQH	Cooling	527.9
	Heating	535.5
AP.BDQTH055AYQH	Cooling	660.5
	Heating	690.0
AP.BDQTH080AYQH	Cooling	911.9
	Heating	962.2

Notes: 1) Ratings Are Gross Capacities - For Net Capacities, Add Evaporator Blower Motor Heat.  
 2) Heating Mode: Ratings are based on nominal airflow with on evaporator dry bulb temperatures of 70°F (21.1°C) and condenser entering air temperature of 45°F(7.2°C).

# PHYSICAL SPECIFICATIONS

## COOLING ONLY

Model	EER	Compressor		Exp. Valve Type	Condenser Coil		Condenser Fan		Evaporator Blower			Evaporator Coil		Air Filter	R410A Charge	Approx. Unit Weight		Sound Pressure Level	
		Type	Qty		Face Area ft <sup>2</sup>	Row/ FPI	Size (Qty)	Motor hp (Qty)	Std. Size	Nominal HP	Airflow (Nominal)		Face Area ft <sup>2</sup>	Row/ FPI	Size (Qty)	lbs / system (Qty)	kg	lbs	±2 dB(A)
											CFM	m <sup>3</sup> /hr							
AP.BDQTH015AH	10.2	Inverter Scroll	1	EEV	23.3	3/12	660(2)	5/8(2)	15x15	4.0	4800	8155	11.5	4/12	20x20x2(2) 20x25x2(2)	26.0(1)	816	1795	76
AP.BDQTH025AH	10.4	One Inverter Scroll + Fix Speed Scrolls	2	EEV on 1st System, other system(s) with TXV	28.6	4/16	660(2)	5/8(2)	18x13	5.5	7500	12743	16.7	4/12	25x25x2(4)	28.7(1) 14.1(1)	1109	2440	76
AP.BDQTH035AH	10.2		2		22.3	4/16	800(2)	2.0(2)	450x 450	10.0	11500	19539	25.3	4/12	16x20x2(1) 16x25x2(2) 20x20x2(2) 20x25x2(4)	37.5(1) 28.7(1)	1573	3461	80
AP.BDQTH045AH	10.3		3		58.3	4/16	660(4)	5/8(4)	500x 500	15.0	15000	25485	30.0	4/14	20x25x2(9)	40.1(1) 46.5(1)	1958	4308	80
AP.BDQTH055AH	10.0		4		89.2	3/12	800(4)	2.0(4)	560x 560	15.0	17200	29223	35.0	4/14	20x25x2(3) 25x25x2(6)	34.0(1) 22.9(1) 43.9(1)	2842	6252	81
AP.BDQTH080AH	10.1		6		109.5	4/16	800(4)	2.0(4)	710 x710	20.0	24000	40776	46.7	4/16	20x25x2(3) 25x25x2(9)	37.3(1) 25.8(1) 49.8(1) 50.0(1)	4060	8932	82

- Notes: 1) Ratings are based on nominal airflow with on evaporator dry/wet bulb temperatures of 80/67°F (27/19.4°C) and condenser entering air temperature of 95°F(35°C).  
 2) Ratings are gross capacities. For net capacity deduct evaporator blower motor heat.  
 3) EER published as above is gross EER.  
 4) Evaporator blower motor's nominal HP is based on 1 in WG ESP (external static pressure).  
 5) Sound Pressure Level is calculated based on nominal airflow at external static pressure of 1in WG and 3m (10ft) distance away from unit at free field. Unit supply and return are assumed to be entirely insulated. The actual sound at field could be affected by the supply and return duct break out noise.

## HEAT PUMP

Model	EER	Compressor		Exp. Valve Type	Condenser Coil		Condenser Fan		Evaporator Blower			Evaporator Coil		Air Filter	R410A Charge	Approx. Unit Weight		Sound Pressure Level	
		Type	Qty		Face Area ft <sup>2</sup>	Row/ FPI	Size (Qty)	Motor hp (Qty)	Std. Size	Nominal HP	Airflow (Nominal)		Face Area ft <sup>2</sup>	Row/ FPI	Size (Qty)	lbs / system (Qty)	kg	lbs	±2 dB(A)
											CFM	m <sup>3</sup> /hr							
AP.BDQTH015AYQH	10.2	Inverter Scroll	1	EEV	23.3	4/12	660(2)	5/8(2)	15x15	4.0	4800	8155	11.5	4/12	20x20x2(2) 20x25x2(2)	27.3(1)	832	1830	76
AP.BDQTH025AYQH	10.3	One Inverter Scroll + Fix Speed Scrolls	2	EEV on 1st System, other system(s) with TXV	28.6	5/12	660(2)	5/8(2)	18x13	5.5	7500	12743	16.7	4/12	25x25x2(4)	36.8(1) 18.3(1)	1133	2493	76
AP.BDQTH035AYQH	10.2		2		22.3	5/12	800(2)	2.0(2)	450x 450	10.0	11500	19539	25.3	4/12	16x20x2(1) 16x25x2(2) 20x20x2(2) 20x25x2(4)	48.5(1) 36.8(1)	1608	3538	80
AP.BDQTH045AYQH	10.3		3		58.3	5/12	660(4)	5/8(4)	500x 500	15.0	15000	25485	30.0	4/14	20x25x2(9)	51.8(1) 60.2(1)	2003	4407	80
AP.BDQTH055AYQH	10.0		4		89.2	3/12	800(4)	2.0(4)	560x 560	15.0	17200	29223	35.0	4/14	20x25x2(3) 25x25x2(6)	35.7(1) 24.0(1) 45.9(1)	2897	6373	81
AP.BDQTH080AYQH	10.0		6		109.5	5/12	800(4)	2.0(4)	710x 710	20.0	24000	40776	46.7	4/16	20x25x2(3) 25x25x2(9)	48.3(1) 33.1(1) 64.2(1) 64.6(1)	4152	9134	82

- Notes: 1) Cooling mode ratings are based on nominal airflow with on evaporator dry/wet bulb temperatures of 80/67°F (27/19.4°C) and condenser entering air temperature of 95°F(35°C).  
 2) Heating mode ratings are based on nominal airflow with on evaporator dry bulb temperatures of 70°F (21.1°C) and condenser entering air temperature of 45°F (7.2°C).  
 3) Ratings are gross capacities. For net cooling capacity deduct evaporator blower motor heat, net heating capacity to add blower motor heat.  
 4) EER and COP published as above are gross EER and COP. Cooling mode efficiency is rated in EER and heating mode efficiency is rated in COP.  
 5) Evaporator blower motor's nominal HP is based on 1 in WG ESP (external static pressure).  
 6) Sound Pressure Level is calculated based on nominal airflow at external static pressure of 1in WG and 3m (10ft) distance away from unit at free field. Unit supply and return are assumed to be entirely insulated. The actual sound at field could be affected by the supply and return duct break out noise.

# SYSTEM COOLING CAPACITY

## PERFORMANCE DATA - COOLING ONLY

Model	EER	Std. Capacity MBH	Air On Evap.		Cooling Capacity @ Ambient Air Temperature On Condenser															
			CFM	WB Temp		95°F [35°C]					105°F [41°C]					115°F [46°C]				
				°F	°C	Total		Sensible		kW Input	Total		Sensible		kW Input	Total		Sensible		kW Input
						MBH	kW	MBH	kW		MBH	kW	MBH	kW		MBH	kW	MBH	kW	
AP.BDQTH015AH	10.2	169.3	4800	72	22.2	186.3	54.6	91.7	26.9	14.58	177.3	52.0	90.1	26.4	15.97	159.9	46.9	83.4	24.4	15.46
				67	19.4	169.3	49.6	116.6	34.2	14.16	162.5	47.6	113.4	33.2	15.57	146.7	43.0	107.2	31.4	15.09
				62	16.7	156.0	45.7	140.6	41.2	13.94	150.0	44.0	137.7	40.4	15.33	131.3	38.5	128.9	37.8	14.97
AP.BDQTH025AH	10.3	259.7	7500	72	22.2	274.9	80.6	139.2	40.8	21.77	261.5	76.6	134.0	39.3	23.87	239.2	70.1	125.3	36.7	24.00
				67	19.4	259.7	76.1	178.9	52.4	21.11	249.2	73.0	174.0	51.0	23.22	219.9	64.5	164.8	48.3	23.55
				62	16.7	239.1	70.1	214.7	62.9	20.69	222.8	65.3	208.6	61.1	22.84	204.3	59.9	201.7	59.1	23.14
AP.BDQTH035AH	10.2	391.4	11500	72	22.2	429.5	125.9	214.9	63.0	32.30	399.3	117.0	206.2	60.4	35.51	366.7	107.5	193.6	56.7	36.20
				67	19.4	391.4	114.7	270.3	79.2	31.41	364.0	106.7	258.5	75.8	34.57	337.3	98.9	250.3	73.4	35.25
				62	16.7	362.6	106.3	327.8	96.1	30.72	340.1	99.7	316.8	92.9	33.84	304.3	89.2	300.1	88.0	35.02
AP.BDQTH045AH	10.3	527.9	15000	72	22.2	580.4	170.1	289.1	84.7	42.71	526.6	154.3	273.5	80.2	47.52	488.4	143.2	258.4	75.7	50.37
				67	19.4	527.9	154.7	368.2	107.9	41.63	491.6	144.1	353.0	103.5	46.15	446.1	130.8	334.5	98.0	48.97
				62	16.7	490.5	143.8	444.7	130.3	40.63	449.0	131.6	426.5	125.0	45.40	423.7	124.2	413.2	121.1	48.28
AP.BDQTH055AH	10.0	660.5	17200	72	22.2	694.5	203.6	343.4	100.7	54.37	667.1	195.5	334.8	98.1	60.41	607.9	178.2	314.7	92.2	64.07
				67	19.4	660.5	193.6	442.3	129.6	52.36	599.8	175.8	417.5	122.4	58.59	564.3	165.4	402.5	118.0	62.98
				62	16.7	589.8	172.9	520.9	152.7	51.63	557.1	163.3	505.7	148.2	57.86	518.3	151.9	488.2	143.1	61.99
AP.BDQTH080AH	10.1	921.1	24000	72	22.2	1001.1	293.4	498.0	146.0	76.97	923.2	270.6	468.4	137.3	86.01	862.0	252.7	444.5	130.3	93.55
				67	19.4	921.1	270.0	625.6	183.4	75.22	871.7	255.5	602.7	176.7	83.38	791.6	232.0	573.9	168.2	90.94
				62	16.7	843.0	247.1	747.8	219.2	73.40	793.5	232.6	728.4	213.5	81.85	729.1	213.7	699.2	204.9	89.52

Notes: 1) Ratings are based on 80°F (27°C) air on evaporator dry bulb temperature.  
 2) Ratings are gross capacities. For net capacity deduct evaporator blower motor heat.  
 3) kW input shown in the table is total compressor(s) power input.

## PERFORMANCE DATA - HEAT PUMP COOLING MODE

Model	EER	Std. Capacity MBH	Air On Evap.		Cooling Capacity @ Ambient Air Temperature On Condenser															
			CFM	WB Temp		95°F [35°C]					105°F [41°C]					115°F [46°C]				
				°F	°C	Total		Sensible		kW Input	Total		Sensible		kW Input	Total		Sensible		kW Input
						MBH	kW	MBH	kW		MBH	kW	MBH	kW		MBH	kW	MBH	kW	
AP.BDQTH015AYQH	10.2	169.3	4800	72	22.2	186.3	54.6	91.7	26.9	14.58	177.3	52.0	90.1	26.4	15.97	159.9	46.9	83.4	24.4	15.46
				67	19.4	169.3	49.6	116.6	34.2	14.16	162.5	47.6	113.4	33.2	15.57	146.7	43.0	107.2	31.4	15.09
				62	16.7	156.0	45.7	140.6	41.2	13.94	150.0	44.0	137.7	40.4	15.33	131.3	38.5	128.9	37.8	14.97
AP.BDQTH025AYQH	10.3	259.7	7500	72	22.2	283.2	83.0	141.0	41.3	21.82	261.5	76.6	134.0	39.3	24.04	239.1	70.1	125.3	36.7	24.16
				67	19.4	259.7	76.1	178.9	52.4	21.24	249.2	73.0	174.0	51.0	23.26	216.4	63.4	163.3	47.9	23.82
				62	16.7	239.1	70.1	214.7	62.9	20.69	222.8	65.3	208.6	61.1	22.84	198.2	58.1	196.3	57.5	23.33
AP.BDQTH035AYQH	10.2	390.9	11500	72	22.2	429.5	125.9	214.9	63.0	32.46	399.3	117.0	206.2	60.4	35.70	366.0	107.3	193.6	56.7	36.02
				67	19.4	390.9	114.6	270.3	79.2	31.42	375.6	110.1	262.9	77.1	34.54	337.3	98.9	250.3	73.4	35.62
				62	16.7	362.4	106.2	327.8	96.1	30.88	340.0	99.7	318.8	93.4	33.99	310.5	91.0	302.9	88.8	34.83
AP.BDQTH045AYQH	10.3	527.9	15000	72	22.2	580.4	170.2	289.1	84.7	43.07	540.0	158.3	278.1	81.5	47.49	488.1	143.1	258.4	75.7	50.37
				67	19.4	527.9	154.7	368.2	107.9	41.85	491.6	144.1	353.0	103.5	46.51	446.2	130.8	334.5	98.0	49.36
				62	16.7	490.6	143.8	444.7	130.3	40.89	449.1	131.6	426.5	125.0	45.72	416.1	122.0	407.3	119.4	48.38
AP.BDQTH055AYQH	10.0	660.5	17200	72	22.2	694.5	203.6	343.4	100.7	54.37	667.1	195.5	334.8	98.1	60.41	607.9	178.2	314.7	92.2	64.07
				67	19.4	660.5	193.6	442.3	129.6	52.36	599.8	175.8	417.5	122.4	58.59	564.3	165.4	402.5	118.0	62.98
				62	16.7	589.8	172.9	520.9	152.7	51.63	557.1	163.3	505.7	148.2	57.86	518.3	151.9	488.2	143.1	61.99
AP.BDQTH080AYQH	10.0	911.9	24000	72	22.2	1,001.1	293.4	498.0	146.0	77.11	923.2	270.6	468.4	137.3	86.31	862.2	252.7	444.5	130.3	94.12
				67	19.4	911.9	267.3	622.2	182.4	75.42	871.7	255.5	602.7	176.7	84.20	783.0	229.5	570.5	167.2	91.50
				62	16.7	850.8	249.4	751.0	220.1	73.94	783.8	229.7	724.3	212.3	82.50	738.3	216.4	703.3	206.1	90.05

Notes: 1) Ratings are based on 80°F (27°C) air on evaporator dry bulb temperature.  
 2) Ratings are gross capacities. For net capacity deduct evaporator blower motor heat.  
 3) kW input shown in the table is total compressor(s) power input.

# SYSTEM COOLING CAPACITY

## PERFORMANCE DATA – HEAT PUMP HEATING MODE

Model	COP	Std. Capacity MBH	Air On Evap.		Heating Capacity @ Ambient Air Temperature On Condenser												
			CFM	Entering Air Temp DB		23°F [-5°C]			35°F [1.7°C]			45°F [7.2°C]			55°F [12.8°C]		
				°F	°C	Capacity		kW Input	Capacity		kW Input	Capacity		kW Input	Capacity		kW Input
						MBH	kW		MBH	kW		MBH	kW		MBH	kW	
AP.BDQTH015AYQH	3.4	180.4	4800	60	15.6	136.5	40.0	10.46	164.1	48.1	11.44	188.0	55.1	12.34	212.0	62.1	13.29
				70	21.1	132.8	38.9	11.39	160.5	47.0	12.45	180.4	52.9	13.25	200.4	58.7	14.11
				80	26.7	125.2	36.7	12.36	148.9	43.6	13.33	172.7	50.6	14.33	196.8	57.7	15.37
AP.BDQTH025AYQH	3.4	264.1	7500	60	15.6	196.8	57.7	14.87	233.0	68.3	16.15	269.6	79.0	17.46	312.5	91.6	19.00
				70	21.1	191.1	56.0	16.30	233.6	68.5	17.83	264.1	77.4	19.05	307.0	90.0	20.72
				80	26.7	191.7	56.2	18.10	222.0	65.1	19.38	258.5	75.8	20.89	295.5	86.6	22.46
AP.BDQTH035AYQH	3.3	409.6	11500	60	15.6	297.7	87.3	22.40	352.7	103.4	24.36	408.5	119.7	26.34	473.9	138.9	28.68
				70	21.1	289.1	84.7	24.50	353.8	103.7	26.81	409.6	120.1	28.94	465.6	136.5	31.20
				80	26.7	299.4	87.8	27.50	345.5	101.3	29.41	401.1	117.6	31.71	457.4	134.1	34.16
AP.BDQTH045AYQH	3.4	535.5	15000	60	15.6	395.3	115.9	28.90	471.1	138.1	31.27	546.9	160.3	33.75	623.5	182.7	36.38
				70	21.1	396.1	116.1	32.24	459.3	134.6	34.45	535.5	157.0	37.12	612.1	179.4	39.96
				80	26.7	384.8	112.8	35.68	447.8	131.3	38.08	524.0	153.6	40.99	601.0	176.2	44.12
AP.BDQTH055AYQH	3.2	690.0	17200	60	15.6	513.1	150.4	38.40	600.1	175.9	41.54	688.3	201.7	44.73	776.7	227.7	48.22
				70	21.1	514.2	150.7	42.97	601.9	176.4	46.39	690.0	202.2	49.95	763.5	223.8	53.20
				80	26.7	501.1	146.9	47.75	573.9	168.2	50.86	661.8	194.0	54.77	750.7	220.0	58.89
AP.BDQTH080AYQH	3.3	962.2	24000	60	15.6	726.0	212.8	54.12	852.8	250.0	58.47	981.3	287.6	63.04	1131.8	331.7	68.67
				70	21.1	706.3	207.0	60.03	812.4	238.1	64.04	962.2	282.0	69.78	1112.6	326.1	75.99
				80	26.7	708.6	207.7	67.58	814.6	238.8	72.01	942.8	276.3	77.53	1072.2	314.3	83.46

Notes: 1) Ratings are based on nominal airflow with on evaporator dry bulb temperatures of 70°F(21.1°C) and condenser entering air temperature of 45°F(7.2°C).  
 2) Ratings are gross capacities. For net capacity add evaporator blower motor heat.  
 3) kW input shown in the table is total compressor(s) power input

## BLOWER PERFORMANCE

### EVAPORATOR

Model	Airflow on Evaporator		Blower Size	Internal Static Pressure (ISP)		External Static Pressure (ESP) in WG					
	CFM	(m³/h)		Standard	in WG	Pa	1 [249]		1.5 [374]		2 [498]
			RPM				Motor Hp	RPM	Motor Hp	RPM	Motor Hp
AP.BDQTH015	4,800	(8,155)	15-15	0.72	179.4	892	3.0	1,003	4.0	1,108	4.0
AP.BDQTH025	7,500	(12,743)	18-13	0.77	191.9	843	5.5	919	7.5	991	7.5
AP.BDQTH035	11,500	(19,539)	450x450	0.78	194.4	833	10.0	905	10.0	972	15.0
AP.BDQTH045	15,000	(25,485)	500x500	0.96	239.2	788	15.0	849	15.0	907	20.0
AP.BDQTH055	17,200	(29,223)	560x560	0.94	234.2	671	15.0	728	15.0	783	20.0
AP.BDQTH080	24,000	(40,776)	710x710	1.14	284.1	531	20.0	579	20.0	626	25.0

Notes: 1) Internal static pressure (ISP) includes pressure drops through evaporator coil, standard filter and unit casing.  
 2) Please consult factory for ESP exceeds the above table.

## LIMITS AND CORRECTION FACTORS

### OPERATING LIMITS

#### COOLING (AIR TEMPERATURE °F)

		DB	WB
OUTDOOR	MAX.	115	-
	MIN.	66	-

#### HEATING (AIR TEMPERATURE °F)

		DB	WB
OUTDOOR	MAX.	75	-
	MIN.	15	-

### CORRECTION FACTORS

To correct for variation in airflow, use this multiplier

Air Flow Variation	Total Capacity	Sensible Capacity
0.9	0.980	0.950
1.0	1.000	1.000
1.1	1.015	1.045

To correct for altitude, use this multiplier

Air Above Sea Level - ft	Cooling Capacity
0	1
2000	0.98
3000	0.97
4000	0.96
5000	0.95
6000	0.93