

# Bosch BOVA Split System Heat Pump

Condensing Units Up to 18 SEER

2-3-4-5 Ton Capacity

R410A



# BOSCH

## Product Specifications





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## 1 Product features

### 1.1 Standard features

- ▶ R-410A chlorine-free refrigerant
- ▶ Load 25%-110%
- ▶ Intelligent oil return technology
- ▶ Inverter Driven Rotary Compressor
- ▶ Crankcase Heater Standard
- ▶ Compressor Sound Blanket
- ▶ Multiple System Protection:
  - High pressure switch and low pressure transducer
  - Compressor Liquid return protection
  - Compressor high or low compression ratio protection
  - Compressor high temperature Protection
  - High / low voltage Protection and Over Current Protection
  - IPM and electronic control board high temperature Protection
- ▶ AHRI certified; ETL listed

### 1.2 Cabinet features

- ▶ Unique sound control top design
- ▶ Baked-on powder paint finish
- ▶ Wind Load compliant per Florida Building Code - 2010
- ▶ Wire fan discharge grille
- ▶ Steel louver coil guard

## 2 Nomenclature

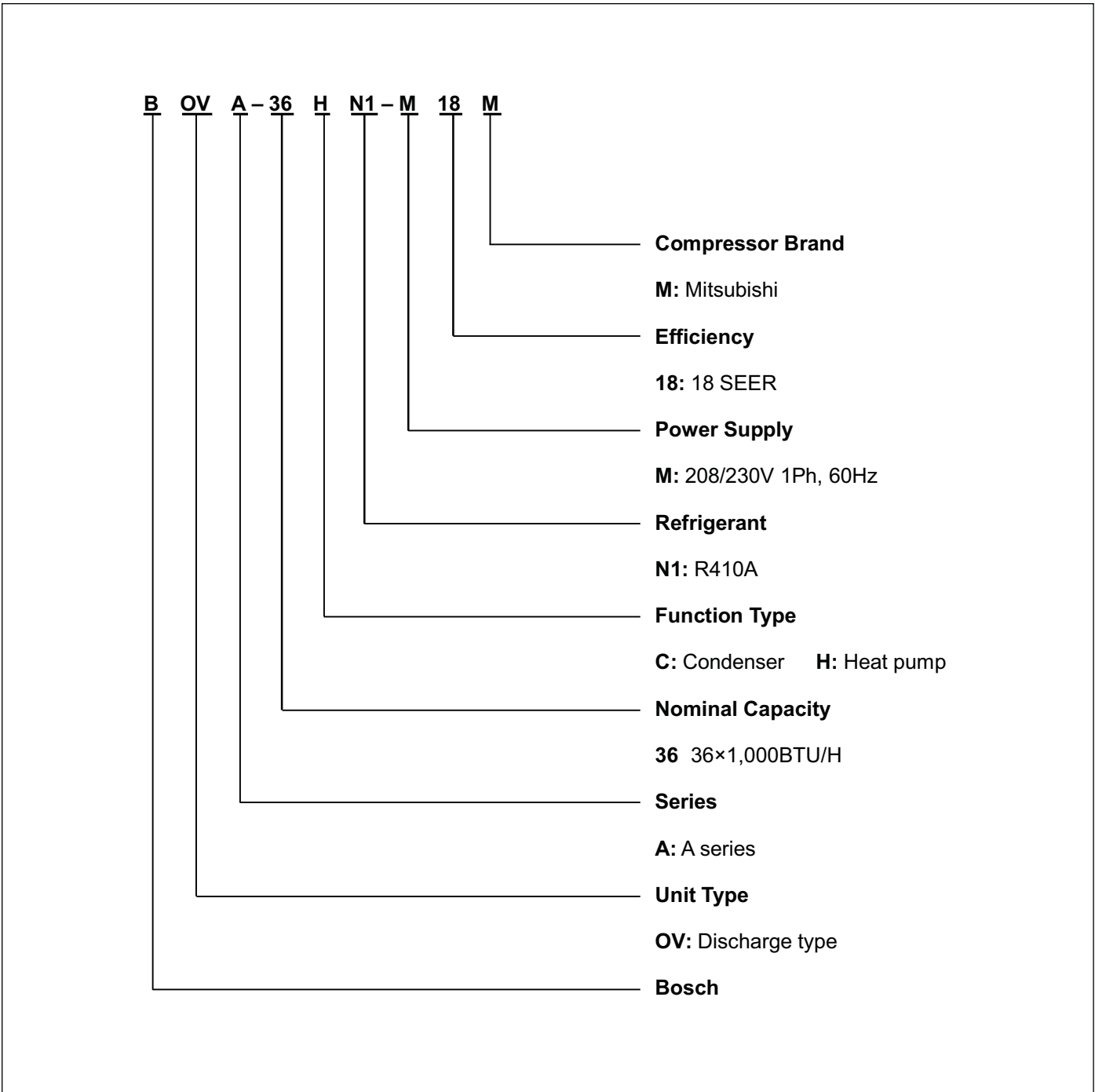


Figure 1

### 3 Product specifications

	BOVA 36	BOVA 60
<b>Cooling Capacity</b>		
Nominal Cooling (BTU/h)	34,600	57,000
Nominal Heating (BTU/h)	33,600	55,000
<b>Decibels([dB(A))</b>		
Max.@100% load	77	79
Min.@min load	50	50
<b>Compressor</b>		
RLA	18.5	27.2
LRA	45	58.1
<b>Condenser Fan Motor</b>		
Horsepower (HP)	1/6	1/3
FLA	1.0	2.5
<b>Refrigeration System</b>		
Refrigerant Line Size <sup>1</sup>		
Liquid Line Size ("O.D.)	3/8"	3/8"
Suction Line Size ("O.D.)	3/4"	7/8"
Refrigerant Connection Size		
Liquid Valve Size ("O.D.)	3/8"	3/8"
Suction Line Size ("O.D.)	3/4"	7/8"
Refrigerant Charge(R-410A,oz)	121	163
Expansion Device	EEV	EEV
Maximum Line Length	100 FT	100 FT
Maximum Elevation Difference	50 FT	50 FT
<b>Charging Specifications</b>		
Subcooling at Service Valve	10°F (± 2°F)	8°F (± 2°F)
<b>Operating Range</b>		
Cooling	40°F-120°F	40°F-120°F
Heating	5°F-86°F	5°F-86°F
<b>Electrical Data</b>		
Voltage-Phase-Hz	208/230-1-60	208/230-1-60
Minimum Circuit Ampacity <sup>2</sup>	24.2	36.5
Max. Overcurrent Protection <sup>3</sup>	40	60
Min / Max Volts	187 / 253	187 / 253
<b>Weight</b>		
Equipment Weight (lbs)	157	205
Ship Weight (lbs) <sup>4</sup>	165	216

Table 1

- 1 Tested and rated in accordance with AHRI Standard 210/240.
- 2 Wire size should be determined in accordance with National Electrical Codes; extensive wire runs will require larger wire sizes.
- 3 Must use time-delay fuses or HACR-type circuit breakers of the same size as noted.
- 4 Weight values are estimated.



- Always check the rating plate for electrical data on the unit being installed.
- Unit is factory charged with refrigerant for 15' of 3/8" liquid line. System charge must be adjusted per Installation Instructions Final Charge Procedure.
- Installation of these units requires the specified TXV Kit to be installed on the indoor coil. THE SPECIFIED TXV IS DETERMINED BY THE OUTDOOR UNIT, NOT THE INDOOR COIL.











24 AHU + BOVA 36 HP For Heating																			
Airflow (CFM)	ID	OD	72	67	62	57	52	47	42	37	32	27	22	17	12	7	2	-3	
700	60	TC	30.3	30.3	30.3	30.3	30.3	28.5	26.8	25.2	23.7	22.3	20.9	19.9	19.1	18.7	18.3	18.0	
		kW	1.66	1.80	1.94	2.06	2.26	2.28	2.37	2.35	2.33	2.28	2.25	2.23	2.29	2.39	2.51	2.63	
	70	TC	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	21.7	20.8	19.8	18.9	18.7	18.4	18.1	18.0	17.7
		kW	1.37	1.47	1.56	1.67	1.80	1.92	2.11	2.11	2.19	2.24	2.23	2.28	2.39	2.48	2.61	2.73	
	75	TC	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.0	19.0	17.7	16.8	16.3	16.0	15.6	15.3
		kW	1.25	1.33	1.41	1.50	1.59	1.71	1.86	1.99	2.12	2.16	2.15	2.14	2.20	2.27	2.35	2.43	
	80	TC	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	16.8	16.1	15.8	15.5	15.2
		kW	1.12	1.19	1.26	1.33	1.42	1.50	1.63	1.74	1.86	1.99	2.12	2.18	2.26	2.35	2.42	2.48	
800	60	TC	30.9	30.9	30.9	30.9	30.9	29.0	27.3	25.6	24.1	22.6	21.3	20.2	19.4	19.0	18.6	18.3	
		kW	1.67	1.80	1.94	2.06	2.26	2.28	2.34	2.32	2.29	2.25	2.22	2.20	2.26	2.36	2.48	2.59	
	70	TC	24.0	24.0	24.0	24.0	24.0	24.0	24.0	22.1	21.1	20.2	19.2	19.0	18.7	18.4	18.2	18.0	
		kW	1.37	1.47	1.56	1.68	1.80	1.93	2.08	2.08	2.16	2.21	2.19	2.25	2.35	2.44	2.57	2.68	
	75	TC	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.3	19.3	18.0	17.1	16.6	16.2	15.9	15.6	
		kW	1.25	1.33	1.41	1.50	1.60	1.71	1.84	1.96	2.09	2.13	2.12	2.11	2.17	2.24	2.32	2.39	
	80	TC	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.1	16.4	16.1	15.7	15.4	
		kW	1.13	1.19	1.26	1.34	1.42	1.50	1.61	1.71	1.83	1.96	2.09	2.15	2.23	2.31	2.38	2.45	
900	60	TC	31.5	31.5	31.5	31.5	31.5	29.6	27.8	26.2	24.6	23.1	21.7	20.6	19.8	19.4	19.0	18.7	
		kW	1.63	1.76	1.89	2.01	2.21	2.23	2.32	2.30	2.27	2.23	2.20	2.18	2.24	2.34	2.45	2.57	
	70	TC	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	22.5	21.5	20.5	19.5	19.3	19.0	18.6	18.4	18.2
		kW	1.34	1.43	1.52	1.64	1.76	1.88	2.06	2.06	2.14	2.18	2.17	2.22	2.32	2.40	2.52	2.63	
	75	TC	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	20.8	19.7	18.3	17.4	16.9	16.6	16.2	15.9	
		kW	1.22	1.30	1.37	1.47	1.56	1.67	1.82	1.95	2.07	2.11	2.11	2.10	2.15	2.22	2.30	2.37	
	80	TC	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.4	16.7	16.4	16.1	15.8
		kW	1.10	1.16	1.23	1.30	1.38	1.47	1.59	1.70	1.82	1.95	2.08	2.13	2.21	2.29	2.36	2.43	

Table 6

36 AHU + BOVA 36 HP For Heating																			
Airflow (CFM)	ID	OD	72	67	62	57	52	47	42	37	32	27	22	17	12	7	2	-3	
970	60	TC	43.5	43.5	43.5	43.5	43.5	40.8	38.4	36.1	33.9	31.9	30.0	28.5	27.3	26.8	26.3	25.7	
		kW	2.74	2.93	3.12	3.36	3.52	3.49	3.38	3.33	3.30	3.28	3.28	3.27	3.33	3.44	3.59	3.74	
	70	TC	33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8	30.5	28.6	26.6	24.7	23.7	23.0	22.2	21.7	20.9
		kW	2.08	2.21	2.38	2.55	2.77	2.95	3.19	3.10	3.04	2.98	2.91	2.92	2.97	3.00	3.09	3.13	
	75	TC	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	28.5	27.1	25.2	23.9	23.2	22.8	22.3	21.9	
		kW	1.81	1.92	2.04	2.18	2.33	2.51	2.73	2.95	3.11	3.17	3.10	3.07	3.11	3.18	3.27	3.34	
	80	TC	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	23.8	22.8	22.4	21.9	21.5
		kW	1.57	1.66	1.76	1.87	1.99	2.12	2.27	2.45	2.66	2.86	3.08	3.17	3.19	3.24	3.69	3.38	
1120	60	TC	44.0	44.0	44.0	44.0	44.0	41.3	38.9	36.5	34.3	32.3	30.3	28.8	27.7	27.1	26.6	26.0	
		kW	2.73	2.92	3.11	3.35	3.51	3.48	3.36	3.31	3.28	3.25	3.24	3.23	3.26	3.38	3.53	3.67	
	70	TC	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	30.9	28.9	27.0	25.0	24.0	23.3	22.5	22.0	21.2
		kW	2.08	2.20	2.37	2.55	2.76	2.94	3.17	3.08	3.02	2.95	2.88	2.88	2.92	2.95	3.04	3.08	
	75	TC	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	28.9	27.4	25.5	24.2	23.5	23.0	22.6	22.1
		kW	1.80	1.92	2.04	2.18	2.32	2.50	2.72	2.93	3.09	3.14	3.06	3.03	3.05	3.12	3.21	3.28	
	80	TC	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.1	23.1	22.7	22.2	21.8
		kW	1.56	1.65	1.76	1.86	1.99	2.12	2.26	2.44	2.63	2.83	3.04	3.13	3.13	3.18	3.62	3.32	
1270	60	TC	44.5	44.5	44.5	44.5	44.5	41.8	39.3	36.9	34.7	32.6	30.7	29.2	28.0	27.4	26.9	26.3	
		kW	2.65	2.82	3.01	3.24	3.39	3.37	3.25	3.21	3.18	3.16	3.16	3.16	3.21	3.32	3.46	3.60	
	70	TC	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	31.2	29.3	27.3	25.3	24.3	23.6	22.8	22.3	21.5
		kW	2.01	2.13	2.29	2.46	2.67	2.85	3.08	2.99	2.93	2.87	2.81	2.82	2.87	2.90	2.99	3.03	
	75	TC	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.2	27.7	25.8	24.5	23.8	23.3	22.8	22.4	
		kW	1.74	1.85	1.97	2.11	2.24	2.42	2.63	2.85	3.00	3.06	2.99	2.96	3.00	3.06	3.15	3.22	
	80	TC	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	24.4	23.4	22.9	22.5	22.0
		kW	1.51	1.60	1.70	1.80	1.92	2.05	2.19	2.36	2.56	2.76	2.97	3.06	3.07	3.12	3.56	3.26	

Table 7

48 AHU + BOVA 60 HP For Heating																			
Airflow (CFM)	ID	OD	72	67	62	57	52	47	42	37	32	27	22	17	12	7	2	-3	
1360	60	TC	59.1	59.1	59.1	59.1	59.1	55.6	52.3	49.1	46.2	43.4	40.8	38.8	37.2	36.1	35.4	35.0	
		KW	3.34	3.58	3.84	4.25	4.69	4.56	4.47	4.39	4.32	4.23	4.13	4.00	3.86	3.58	3.48	3.41	
	70	TC	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	42.0	39.8	37.6	35.4	34.6	34.3	33.9	34.1	34.1
		KW	2.63	2.78	3.00	3.23	3.51	3.80	4.20	4.20	4.14	4.06	3.94	3.91	3.85	3.59	3.59	3.56	
	75	TC	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	38.8	36.9	34.3	32.6	31.6	31.3	31.0	31.3	
		KW	2.31	2.44	2.59	2.75	2.97	3.21	3.50	3.80	4.04	4.10	4.02	3.86	3.71	3.45	3.38		
	80	TC	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	32.4	31.1	30.8	30.6	30.9	
		KW	2.00	2.11	2.23	2.37	2.53	2.73	2.96	3.24	3.54	3.80	3.95	3.92	3.74	3.41	3.36	3.36	
1560	60	TC	59.8	59.8	59.8	59.8	59.8	56.2	52.8	49.7	46.7	43.9	41.2	39.2	37.6	36.5	35.8	35.4	
		KW	3.32	3.57	3.83	4.23	4.67	4.54	4.44	4.36	4.28	4.18	4.07	3.95	3.80	3.53	3.43	3.36	
	70	TC	46.5	46.5	46.5	46.5	46.5	46.5	46.5	42.4	40.2	38.0	35.8	35.0	34.7	34.4	34.6	34.6	
		KW	2.62	2.77	2.98	3.22	3.50	3.78	4.17	4.17	4.10	4.01	3.89	3.85	3.79	3.54	3.54	3.51	
	75	TC	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	39.2	37.3	34.7	32.9	31.9	31.6	31.3	31.6	
		KW	2.30	2.43	2.57	2.74	2.96	3.19	3.48	3.77	4.01	4.05	3.97	3.81	3.65	3.40	3.33	3.33	
	80	TC	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	32.7	31.4	31.1	31.0	31.3	
		KW	2.00	2.10	2.22	2.36	2.52	2.72	2.95	3.22	3.51	3.76	3.90	3.87	3.69	3.36	3.31	3.31	
1760	60	TC	60.8	60.8	60.8	60.8	60.8	57.2	53.7	50.5	47.5	44.6	42.0	39.9	38.3	37.1	36.4	36.0	
		KW	3.23	3.47	3.72	4.12	4.54	4.41	4.33	4.25	4.18	4.10	4.00	3.88	3.74	3.47	3.37	3.30	
	70	TC	47.3	47.3	47.3	47.3	47.3	47.3	47.3	43.1	40.9	38.6	36.3	35.5	35.1	34.8	35.0	34.9	
		KW	2.55	2.69	2.90	3.13	3.40	3.68	4.06	4.06	4.01	3.93	3.81	3.78	3.71	3.46	3.46	3.43	
	75	TC	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	39.9	37.9	35.3	33.5	32.5	32.2	31.9	32.2	
		KW	2.23	2.36	2.50	2.66	2.88	3.11	3.39	3.68	3.92	3.97	3.89	3.74	3.59	3.34	3.27	3.27	
	80	TC	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	33.3	32.0	31.7	31.5	31.8
		KW	1.94	2.04	2.16	2.30	2.45	2.64	2.87	3.14	3.43	3.68	3.82	3.80	3.62	3.30	3.25	3.25	

Table 8

60 AHU + BOVA 60 HP For Heating																			
Airflow (CFM)	ID	OD	72	67	62	57	52	47	42	37	32	27	22	17	12	7	2	-3	
1500	60	TC	69.7	69.7	69.7	69.7	65.5	61.6	57.9	54.4	51.1	48.1	45.2	42.9	41.2	40.0	39.2	38.8	
		KW	4.24	4.58	5.02	5.47	5.30	5.15	5.05	4.95	4.86	4.77	4.68	4.59	4.57	4.53	4.43	4.20	
	70	TC	54.2	54.2	54.2	54.2	54.2	54.2	54.2	49.2	46.4	43.6	40.7	39.5	38.8	38.0	37.7	37.2	
		KW	3.18	3.41	3.65	3.94	4.34	4.71	5.13	4.96	4.86	4.73	4.61	4.57	4.61	4.56	4.46	4.15	
	75	TC	48.9	48.9	48.9	48.9	48.9	48.9	48.9	48.9	47.9	45.6	42.4	40.2	39.0	38.6	38.3	38.6	
		KW	2.91	3.07	3.27	3.52	3.81	4.16	4.51	4.90	5.18	5.21	5.01	4.87	4.83	4.81	4.66	4.41	
	80	TC	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	38.2	36.6	36.3	36.1	36.5
		KW	2.39	2.52	2.67	2.86	3.08	3.27	3.57	3.90	4.18	4.42	4.65	4.72	4.74	4.70	4.55	4.28	
1700	60	TC	70.7	70.7	70.7	70.7	66.5	62.5	58.7	55.2	51.9	48.8	45.9	43.6	41.8	40.6	39.8	39.4	
		KW	4.22	4.55	4.99	5.44	5.27	5.13	5.02	4.92	4.83	4.74	4.66	4.57	4.55	4.51	4.40	4.17	
	70	TC	55.0	55.0	55.0	55.0	55.0	55.0	55.0	49.9	47.0	44.2	41.3	40.0	39.2	38.4	38.1	37.5	
		KW	3.16	3.39	3.63	3.92	4.31	4.69	5.10	4.93	4.83	4.70	4.58	4.54	4.57	4.52	4.42	4.10	
	75	TC	47.4	47.4	47.4	47.4	47.4	47.4	47.4	46.4	44.1	41.0	39.0	37.8	37.4	37.0	37.4		
		KW	2.76	2.91	3.11	3.34	3.61	3.95	4.28	4.65	4.91	4.94	4.75	4.62	4.58	4.56	4.42	4.18	
	80	TC	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7	38.7	37.2	36.8	36.6	37.0
		KW	2.37	2.51	2.65	2.84	3.06	3.25	3.55	3.88	4.15	4.40	4.62	4.69	4.71	4.67	4.52	4.25	
1900	60	TC	72.0	72.0	72.0	72.0	67.7	63.6	59.8	56.2	52.8	49.7	46.7	44.4	42.6	41.3	40.5	40.1	
		KW	4.25	4.59	5.03	5.48	5.31	5.16	5.05	4.95	4.86	4.77	4.69	4.60	4.58	4.54	4.43	4.20	
	70	TC	56.0	56.0	56.0	56.0	56.0	56.0	56.0	50.8	47.8	44.8	41.9	40.5	39.6	38.8	38.4	37.7	
		KW	3.18	3.41	3.66	3.95	4.34	4.72	5.13	4.96	4.85	4.72	4.59	4.55	4.57	4.51	4.40	4.07	
	75	TC	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	55.0	52.2	48.6	46.1	44.8	44.3	43.9	44.3	
		KW	3.23	3.41	3.64	3.91	4.23	4.62	5.01	5.45	5.75	5.79	5.57	5.41	5.37	5.35	5.18	4.90	
	80	TC	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4	39.4	37.9	37.5	37.3	37.7
		KW	2.39	2.52	2.67	2.86	3.08	3.27	3.58	3.91	4.18	4.43	4.66	4.73	4.75	4.71	4.55	4.28	

Table 9

## 5 Performance data

Outdoor Unit	Indoor Unit	Cooling Capacity (BTU/h)			Heating Capacity			CFM
	Coils/Air Handlers	Total	SEER <sup>1</sup>	EER <sup>2</sup>	Hi	HSPF <sup>3</sup>	Low	
BOVA 36 HP	24	24000	18.5	13.0	24000	9.5	19000	800
BOVA 36 HP	36	34600	17.5	11.4	34200	9.0	24000	1120
BOVA 60 HP	48	47000	18.5	12.5	46500	9.5	35000	1560
BOVA 60 HP	60	57000	17.5	11.2	55000	9.5	40000	1700

Table 10

<sup>1</sup> Seasonal Energy Efficiency Ratio; Certified per ARI 210/240

<sup>2</sup> Energy Efficiency Ratio; Certified per ARI 210/240

<sup>3</sup> HSPF = Heating Seasonal Performance Factor; Certified per ARI 210/240



Always check the rating plate for electrical data on the unit being installed.



The above data are for reference only.

## 6 Dimensions

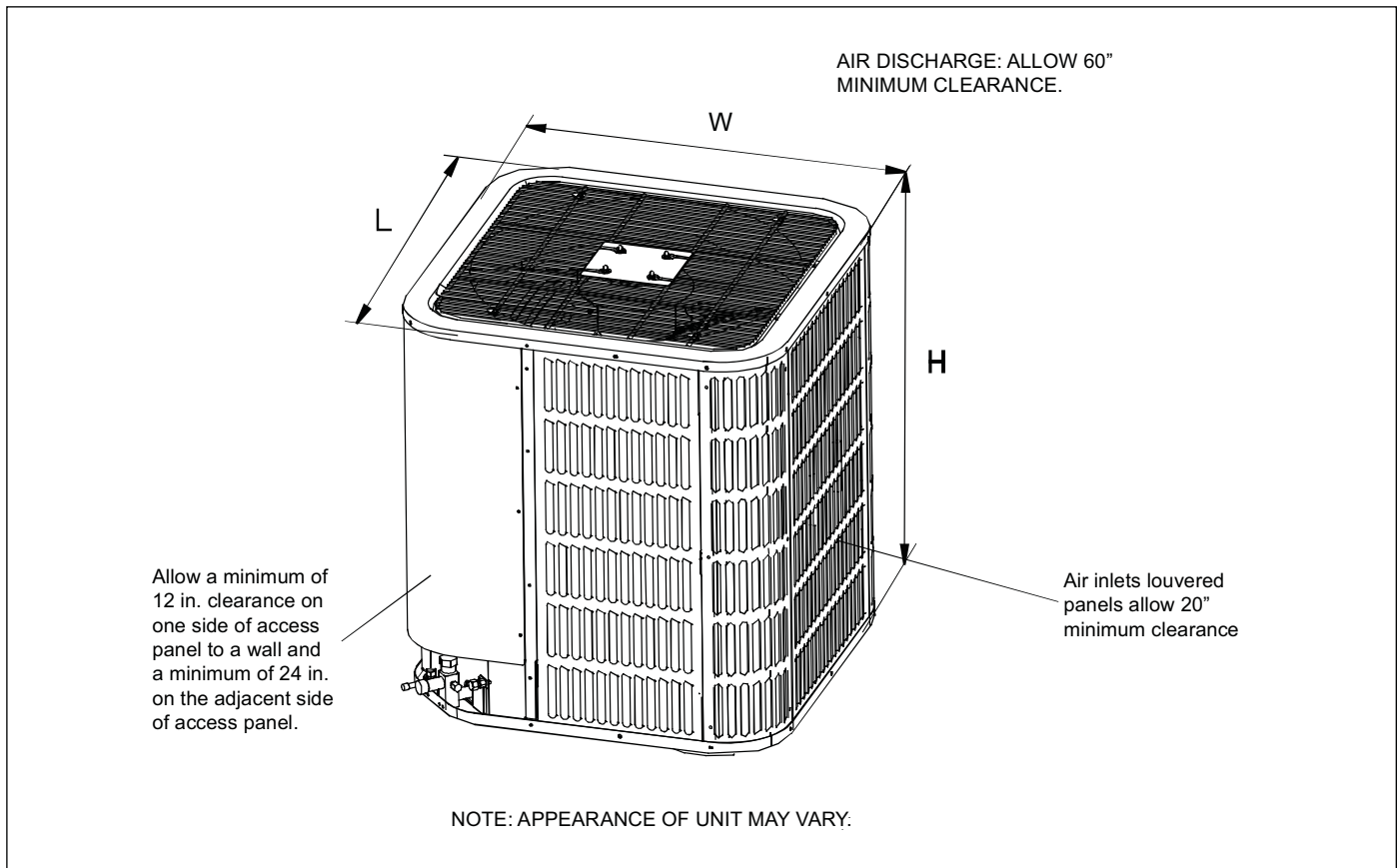


Figure 2

Model Size	Dimensions (Inches)		
	"H" in. [mm]	"W" in. [mm]	"L" in. [mm]
Heat Pump			
BOVA 36	24-15/16 [633]	29-1/8 [740]	29-1/8 [740]
BOVA 60	33-3/16 [843]	29-1/8 [740]	29-1/8 [740]

Table 11

### Suction line length/size vs capacity multiplier(R410A)

Model Size		2 Ton	3 Ton	4 Ton	5 Ton
Suction Line Connection Size		3/4" O.D.	3/4" O.D.	7/8" O.D.	7/8" O.D.
Suction Line Run - Feet		5/8 Opt.	5/8 Opt.	3/4 Opt.	3/4 Opt.
		3/4* Std.	3/4* Std.	7/8* Std.	7/8* Std.
25'	Optional	1.00	1.00	1.00	0.99
	Standard	1.00	1.00	1.00	1.00
50'	Optional	0.98	0.98	0.98	0.97
	Standard	0.99	0.99	0.99	0.98
100'	Optional	0.95	0.95	0.95	0.94
	Standard	0.96	0.97	0.97	0.96

Table 12

\* Standard size



Using suction line larger than shown in chart will result in poor oil return and is not recommended.



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