Air Handlers Air Turnover Units Infrared Heaters Unit Heaters Duct Furnaces

4000-Series

Rapid™ Engineering LLC

Air Handling Systems

Cooling, Energy Recovery, Heating & Pressurization

Dimension and Selection Guide

1.800.536.3461

www.rapidengineering.com

INTERTEK ETL LISTED C US

CANADA: 100% OUTSIDE AIR ONLY

Fan Selection Chart

Airflow Cubic Feet per Minute (CFM)	Model	Disch. Vel. Feet per Minute (FPM)	Required Motor Horse Power (HP) @ Noted External Static Pressure									Brake Horse Power (HP) @ Noted External Static Pressure									dBA Decibel @ Noted External Static Pressure
			0"	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	0"	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	0"
5,000	4024	1,241	2	2	2	3	3	3	3	CF	CF	1.1	1.4	1.6	1.9	2.2	2.5	2.8	CF	CF	65
6,000	4024	1,490	2	2	3	3	3	5	5	5	5	1.4	1.7	2.0	2.3	2.6	3.0	3.3	3.6	4.0	68
7,000	4024	1,738	2	3	3	3	5	5	5	5	5	1.8	2.1	2.5	2.8	3.1	3.5	3.9	4.2	4.6	71
8,000	4024	1,986	3	3	5	5	5	5	5	7.5	7.5	2.2	2.6	3.0	3.3	3.7	4.1	4.5	4.9	5.3	74
9,000	4024	2,234	3	5	5	5	5	7.5	7.5	7.5	7.5	2.7	3.1	3.5	4.0	4.4	5.1	5.3	5.7	6.1	76
10,000	4024*	2,483	5	5	5	5	7.5	7.5	7.5	7.5	10	3.2	3.7	4.2	4.6	5.1	5.6	6.1	6.6	7.0	78
10,000	4036	1,226	3	3	5	CF	CF	CF	CF	CF	CF	2.1	2.6	3.2	CF	CF	CF	CF	CF	CF	71
12,500	4036	1,532	5	5	5	5	7.5	7.5	7.5	CF	CF	2.8	3.4	4.0	4.6	5.3	6.0	6.6	CF	CF	73
15,000	4036	1,838	5	5	7.5	7.5	7.5	10	10	10	15	3.7	4.4	5.0	5.7	6.4	7.2	7.9	8.7	9.5	75
15,000	4040	1,309	5	5	7.5	7.5	7.5	10	10	CF	CF	3.4	4.1	4.8	5.5	6.3	7.2	8.0	CF	CF	74
17,500	4036	2,145	7.5	7.5	7.5	10	10	10	15	15	15	4.9	5.6	6.3	7.6	7.9	8.6	9.5	10.3	11.2	78
17,500	4040	1,527	5	7.5	7.5	7.5	10	10	10	15	15	4.2	5.0	5.8	6.6	7.5	8.3	9.2	10.2	11.1	76
20,000	4036	2,451	7.5	10	10	10	15	15	15	15	15	6.3	7.1	7.9	8.7	10.1	10.4	11.3	12.2	13.1	80
20,000	4040	1,745	7.5	7.5	7.5	10	10	15	15	15	15	5.3	6.1	7.0	7.9	8.8	9.7	10.7	11.7	12.7	78
20,000	4044	1,429	5	7.5	7.5	10	10	15	15	15	15	4.7	5.6	6.5	7.5	8.5	9.5	10.6	11.7	12.8	77
22,500	4036*	2,757	10	10	15	15	15	15	15	20	20	8.1	9.0	9.8	10.7	11.6	12.5	13.5	14.5	15.5	82
22,500	4040	1,964	7.5	10	10	15	15	15	15	15	20	6.6	7.5	8.4	9.4	10.3	11.4	12.4	13.4	14.5	80
22,500	4044	1,607	7.5	7.5	10	10	15	15	15	15	20	5.6	6.6	7.6	8.6	9.7	10.8	11.9	13.1	14.3	78
22,500	4049	1,319	7.5	7.5	10	10	15	15	15	20	20	5.1	6.1	7.2	8.3	9.5	10.7	12.0	14.7	16.2	71
25,000	4036*	3,063	15	15	15	15	15	20	20	20	20	10.3	11.2	12.1	13.1	14.0	15.0	16.0	17.7	18.1	86
25,000	4040	2,182	10	10	15	15	15	15	20	20	20	8.2	9.1	10.1	11.1	12.1	13.2	14.3	15.4	16.5	82
25,000	4044	1,786	7.5	10	10	15	15	15	15	20	20	6.7	7.8	8.8	9.9	11.0	12.2	13.4	14.7	15.9	80
25,000	4049	1,465	7.5	10	10	15	15	15	15	20	20	5.9	7.0	8.2	9.4	10.6	11.9	13.2	14.6	15.9	73
27,500	4040	2,400	15	15	15	15	15	20	20	20	20	10.0	11.0	12.1	13.1	14.2	15.4	16.5	17.7	18.9	83
27,500	4044	1,964	10	10	15	15	15	15	20	20	20	8.1	9.1	10.3	11.4	12.6	13.9	15.1	16.4	17.7	81
27,500	4049	1,612	7.5	10	10	15	15	15	20	20	20	6.9	8.1	9.3	10.5	11.9	13.2	14.6	16.0	17.4	75
30,000	4040*	2,618	15	15	20	20	20	20	25	25	25	12.6	13.7	14.8	15.5	16.6	17.8	19.1	20.3	21.6	86
30,000	4044	2,143	15	15	15	15	20	20	20	20	25	9.6	10.7	11.9	13.1	14.4	15.7	17.0	18.4	19.7	83
30,000	4049	1,758	10	10	15	15	15	20	20	20	25	8.0	9.2	10.5	11.9	13.2	14.6	16.1	17.6	19.1	77
30,000	4054	1,395	10	10	15	15	15	20	20	20	25	7.0	8.4	9.8	11.2	12.7	14.3	15.8	17.5	19.2	73
32,500	4044	2,322	15	15	15	20	20	20	20	25	25	11.4	12.6	13.8	15.1	16.4	17.8	19.2	20.6	22.1	84
32,500	4049	1,905	10	15	15	15	20	20	20	25	25	9.3	10.6	11.9	13.3	14.8	16.2	17.7	19.3	20.9	79
32,500	4054	1,512	10	10	15	15	15	20	20	20	25	8.0	9.4	10.8	12.3	13.9	15.5	17.2	18.9	20.6	75
35,000	4044*	2,500	15	20	20	20	20	25	25	25	30	13.4	14.6	16.0	17.3	18.7	20.1	21.6	23.1	24.6	86
35,000	4049	2,051	15	15	15	20	20	20	25	25	25	10.8	12.1	13.5	15.0	16.5	18.0	19.6	21.1	22.8	81
35,000	4054	1,628	10	15	15	15	20	20	25	25	25	9.0	10.5	12.0	13.6	15.2	16.9	18.6	20.4	22.2	77
35,000	4060	1,296	10	15	15	20	20	20	25	25	30	8.0	9.6	12.9	14.8	16.7	18.7	20.7	22.9	25.0	73
37,500	4049*	2,198	15	15	20	20	20	25	25	25	30	12.4	13.8	15.2	16.8	18.3	20.0	21.6	23.3	25.0	82
37,500	4054	1,744	15	15	15	20	20	20	25	25	25	10.2	11.7	13.3	15.0	16.6	18.4	20.2	22.0	23.9	78
37,500	4060	1,388	10	15	15	15	20	20	25	25	25	8.9	10.6	12.3	14.1	15.9	17.8	19.8	21.8	23.9	75
40,000	4049*	2,344	20	20	20	25	25	25	30	30	30	14.2	15.7	17.2	18.8	20.4	22.1	23.8	25.5	27.3	84
40,000	4054	1,860	15	15	20	20	20	25	30	30	40	11.4	13.1	14.7	16.4	18.2	20.0	25.4	27.5	29.5	80
40,000	4060	1,481	15	15	15	20	20	25	25	25	30	9.8	11.6	13.4	15.2	17.1	19.1	21.1	23.2	25.3	76
40,000	4066	1,266	15	15	20	20	25	25	30	30	40	10.5	12.5	14.6	16.7	19.0	21.3	23.8	26.3	29.0	72
45,000	4049*	2,637	20	25	25	30	30	30	40	40	40	18.5	20.1	21.8	23.5	25.2	27.0	28.8	30.7	32.6	87
45,000	4054	2,093	20	20	20	25	25	30	30	30	40	14.5	16.2	18.0	19.8	21.7	23.7	25.7	27.7	29.7	82
45,000	4060	1,667	15	15	20	20	25	25	30	30	40	12.0	13.9	15.8	17.8	19.8	21.9	24.1	26.4	28.6	79
45,000	4066	1,424	15	15	20	20	25	25	30	30	30	10.6	12.6	14.7	16.9	19.1	21.4	23.8	26.2	26.7	74
50,000	4054*	2,326	20	25	25	30	30	30	40	40	40	18.2	20.0	21.9	23.8	25.9	28.0	30.1	32.2	34.4	85
50,000	4060	1,852	20	20	20	25	25	30	30	40	40	14.6	16.6	18.7	20.8	23.0	25.2	27.4	29.8	32.3	81
50,000	4066	1,582	15	20	20	25	25	30	30	40	40	12.5	14.7	16.9	19.2	21.6	24.0	26.5	32.9	35.7	77
50,000	4073	1,455	15	15	20	25	30	30	40	40	40	11.3	13.6	16.0	18.5	23.8	26.7	29.7	32.7	36.0	73

*Denotes MUA configuration only Class II Wheels CF = Contact Factory See Page 3 and 4 for Important Notes.

All dimensions and weights are subject to change without notice.

Fan Selection Chart

Airflow Cubic Feet per Minute (CFM)	Model	Disch. Vel. Feet per Minute (FPM)	Required Motor Horse Power (HP) @ Noted External Static Pressure									Brake Horse Power (HP) @ Noted External Static Pressure									dBA Decibel @ Noted External Static Pressure
			0"	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	0"	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	0"
55,000	4060*	2,037	20	25	25	25	30	30	40	40	40	18.1	20.0	21.9	23.9	26.0	28.1	30.1	32.3	34.6	83
55,000	4066	1,741	20	20	20	25	25	30	30	40	40	15.0	17.1	19.2	21.2	23.5	25.7	28.1	30.4	32.8	80
55,000	4073	1,600	20	20	25	25	30	30	30	CF	CF	16.1	18.4	20.8	23.2	25.6	28.2	30.8	CF	CF	75
60,000	4060*	2,222	25	25	30	30	40	40	40	40	40	22.0	24.1	26.2	28.3	30.5	32.7	35.0	37.3	39.5	85
60,000	4066	1,899	20	25	25	25	30	30	40	40	40	18.1	20.2	22.4	24.7	27.0	29.4	31.8	34.3	36.9	81
60,000	4073	1,745	20	25	25	30	30	40	40	40	40	18.6	21.0	23.5	26.1	28.6	31.3	34.1	36.9	39.7	77
60,000	4080	1,241	20	20	25	25	30	CF	CF	CF	CF	16.5	19.1	21.7	24.5	27.4	CF	CF	CF	CF	72
65,000	4066	2,057	25	25	30	30	40	40	40	40	50	21.6	23.9	26.2	28.6	31.1	33.6	36.1	38.8	41.4	83
65,000	4073	1,891	25	25	30	30	40	40	40	50	50	21.3	23.8	26.5	29.2	31.9	34.7	37.6	40.5	43.5	79
65,000	4080	1,345	20	25	25	30	40	40	CF	CF	CF	18.5	21.3	24.0	27.0	30.2	33.0	CF	CF	CF	74
70,000	4066*	2,215	30	30	40	40	40	40	50	50	50	25.5	27.9	30.4	33.0	35.6	38.2	40.9	43.5	46.4	85
70,000	4073	2,036	25	30	30	40	40	40	50	50	50	24.5	27.1	29.8	32.7	35.6	38.5	41.5	44.5	47.6	81
70,000	4080	1,448	25	25	30	30	40	40	40	50	CF	20.7	23.6	26.6	29.5	32.7	35.9	39.1	42.4	CF	76
75,000	4066*	2,374	30	40	40	40	50	50	50	50	60	30.0	32.6	35.2	37.9	40.6	43.4	46.2	49.1	52.0	87
75,000	4073	2,182	30	40	40	40	40	50	50	50	60	27.9	30.7	33.6	36.4	39.5	42.6	45.7	48.9	52.1	83
75,000	4080	1,552	25	30	30	40	40	40	50	50	50	23.2	26.3	29.4	32.5	35.8	39.1	42.4	45.9	49.4	78
75,000	4089	1,552	25	25	30	40	40	CF	CF	CF	CF	21.3	24.5	27.9	31.3	34.8	CF	CF	CF	CF	73
80,000	4066*	2,532	40	40	50	50	50	50	60	60	60	35.1	37.8	40.6	43.4	46.3	49.2	52.1	55.1	58.2	88
80,000	4073	2,327	40	40	40	50	50	50	60	60	60	31.7	34.6	37.6	40.7	43.7	47.0	50.3	53.6	56.9	85
80,000	4080	1,655	30	30	40	40	40	50	50	50	60	26.0	29.0	33.9	35.5	38.9	42.3	45.8	49.4	52.9	79
80,000	4089	1,655	25	30	40	40	40	50	CF	CF	CF	23.5	26.9	30.3	33.9	37.6	41.3	CF	CF	CF	75
85,000	4073*	2,473	40	40	50	50	50	60	60	60	75	36.0	39.1	42.3	45.5	48.7	51.9	55.4	58.8	62.4	86
85,000	4080	1,759	30	40	40	40	50	50	50	60	60	29.0	32.2	35.5	38.9	42.4	46.0	49.6	53.2	57.1	81
85,000	4089	1,759	30	30	40	40	50	50	50	60	CF	25.8	29.4	33.0	36.6	40.4	44.3	48.3	52.3	CF	76
90,000	4073*	2,618	50	50	50	60	60	60	75	75	75	40.7	43.9	47.2	50.5	53.9	57.4	60.7	64.3	68.0	87
90,000	4080	1,862	40	40	40	50	50	50	60	60	75	32.4	35.7	39.2	42.6	46.3	50.0	53.8	57.6	61.5	82
90,000	4089	1,862	30	40	40	40	50	50	60	60	60	28.3	32.0	35.8	39.6	43.5	47.5	51.6	55.8	60.0	78
95,000	4073*	2,764	50	50	60	60	60	75	75	75	75	45.9	49.2	52.6	56.1	59.6	63.2	66.8	70.5	74.1	88
95,000	4080	1,966	40	40	50	50	60	60	60	75	75	35.9	39.4	43.0	46.6	50.3	54.2	58.1	62.1	66.1	84
95,000	4089	1,966	40	40	40	50	50	60	60	60	75	31.3	35.0	38.9	42.9	46.9	51.0	55.3	59.5	64.0	79
100,000	4073*	2,909	50	50	50	60	60	75	75	75	75	41.2	44.8	48.5	52.3	56.0	60.0	64.1	68.3	72.5	89
100,000	4080	2,069	40	50	50	60	60	60	75	75	75	39.8	43.5	47.2	51.0	54.9	58.7	62.8	66.9	71.1	85
100,000	4089	2,069	40	40	50	50	60	60	60	75	75	34.3	38.1	42.2	46.2	50.5	54.7	59.0	66.2	68.0	80
110,000	4080	2,279	50	60	60	60	75	75	75	100	100	46.2	50.4	54.4	59.4	64.0	68.7	73.6	78.5	83.5	88
110,000	4089	2,276	50	50	50	60	60	75	75	75	100	41.1	45.2	49.5	53.8	58.3	62.8	67.5	72.2	76.9	83
120,000	4080*	2,483	60	75	75	75	100	100	100	100	100	57.0	61.6	66.1	70.9	75.9	80.9	86.1	91.25	96.5	90
120,000	4089*	2,483	50	60	60	75	75	75	100	100	100	49.0	53.4	57.9	62.5	67.1	71.9	76.8	81.9	86.9	85
130,000	4089*	2,690	60	75	75	75	100	100	100	100	100	58.0	62.7	67.5	72.4	77.4	82.2	87.4	92.7	98.0	87
150,000	4089*	3,103	100	100	100	100	125	125	125	125	125	80.0	85.3	90.6	96.0	101.5	107.1	112.8	118.5	124.4	91

*Denotes MUA configuration only Class II Wheels CF = Contact Factory See Page 3 and 4 for Important Notes.

IMPORTANT NOTES:

Sound levels are in dBA at 5' from the discharge opening. This figure does not account for attenuation, additional noise or directivity factors. Motor horsepower required includes both the running HP and the starting torque requirements. HP can be greater than the standard fan curve charts. Brake HP does not include drive losses. For external static pressure greater than 2", contact your local representative or Rapid Engineering LLC. For operation in altitudes exceeding 2000' above sea level, contact the factory. The recommended motor horsepowers shown for the Fan Selection Chart in the 0 in. wc external static pressure column include fan and burner static pressure only (internal equipment static pressure). Other cabinet options could add static pressure and should be included in the external static pressure used to select motor horsepower. See the Static Pressure Drops on page 4 for the external static pressures that should be added for selected options.

Static Pressure Drops for Options

Description	in wc
Cooling Coil Section	0.10
Cooling Coil	CF
Damper - Inlet	0.05
Damper - Low Leak	0.05
Damper - Discharge	0.10
Damper - Discharge, Low Leak	0.10
End Discharge	0.20
Discharge Plate	0.05
Discharge Head - One Way	0.10
Discharge Head - Three Way	0.10
Discharge Head - Four Way	0.05
Horizontal Inlet Hood	0.00
Horizontal Inlet Plenum	0.10
Upright Inlet Plenum Base	0.05

Description	in wc
Moisture Limiter For Horizontal Inlet Hood	0.1
Aluminum Mesh Filters For Horizontal Inlet Hood	0.15
Upright Stand with Polyester Filters (FR)	0.25
Outside Air Filter Section, No Filters	0
Filtered Mixing Box, No Filters	0
Filters - Polyester	0.25
Filters - Aluminum Mesh	0.15
Filters - 30% Pleated	0.25
Custom Filter Options (Bag, Cartridge, HEPA)	CF
Evaporative Cooling Section (ECM)	0.25
Evaporative Cooling Section (ECM-D)	0.50

IMPORTANT NOTE: Calculate the static pressure for selected cabinet options plus any ductwork. Use external static pressure column found in Fan Selection Chart on pages 2-3 to determine motor horsepower.

Burner Selection Chart

Airflow - Cubic Feet per Minute (CFM)	Burner Capacity Chart								
	Gas Flow - Cubic Feet per Hour (CFH) for Stated Temperature Rise								
	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F
5,000	375	375	375	375	750	750	750	750	750
6,000	375	375	750	750	750	750	750	750	1,125
7,000	375	375	750	750	750	750	750	1,125	1,125
8,000	375	750	750	750	750	1,125	1,125	1,125	1,125
9,000	750	750	750	750	750	1,125	1,125	1,125	1,500
10,000	750	750	750	750	1,125	1,125	1,125	1,500	1,500
12,500	750	750	1,125	1,125	1,125	1,500	1,500	1,500	1,875
15,000	750	1,125	1,125	1,125	1,500	1,500	1,875	1,875	2,250
17,500	750	1,125	1,125	1,500	1,500	1,875	1,875	2,250	2,250
20,000	1,125	1,125	1,500	1,500	1,875	2,250	2,250	2,625	2,625
22,500	1,125	1,500	1,500	1,875	2,250	2,250	2,625	2,625	3,000
25,000	1,125	1,500	1,875	1,875	2,250	2,625	2,625	3,000	3,375
30,000	1,500	1,875	2,250	2,250	2,625	3,000	3,375	3,750	4,125
35,000	1,500	1,875	2,250	2,625	3,000	3,375	3,750	4,125	4,500
40,000	1,875	2,250	2,625	3,000	3,375	4,125	4,500	4,875	5,250
45,000	2,250	2,625	3,000	3,375	4,125	4,500	4,875	5,250	6,000
50,000	2,250	2,625	3,375	3,750	4,500	4,875	5,250	6,000	6,375
55,000	2,625	3,000	3,750	4,125	4,875	5,250	6,000	6,375	7,125
60,000	2,625	3,375	4,125	4,500	5,250	6,000	6,375	7,125	7,875
65,000	3,000	3,750	4,125	4,875	5,625	6,375	7,125	7,500	8,625
70,000	3,000	3,750	4,500	5,250	6,000	6,750	7,500	8,250	9,000
75,000	3,375	4,125	4,875	5,625	6,375	7,125	7,875	9,000	9,750
80,000	3,375	4,500	5,250	6,000	6,750	7,875	8,625	9,375	10,500
85,000	3,750	4,500	5,625	6,375	7,500	8,250	9,000	10,125	10,875
90,000	4,125	4,875	6,000	6,750	7,875	8,625	9,750	10,875	11,625
95,000	4,125	5,250	6,000	7,125	8,250	9,375	10,125	11,250	12,375
100,000	4,500	5,250	6,375	7,500	8,625	9,750	10,875	12,000	13,125
110,000	4,875	6,000	7,125	8,250	9,375	10,500	12,000	13,125	14,250
120,000	5,250	6,375	7,875	9,000	10,500	11,625	13,125	14,250	15,375
130,000	5,625	7,125	8,250	9,750	11,250	12,750	13,875	15,375	16,875
150,000	6,375	7,875	9,750	11,250	12,750	14,625	16,125	17,625	19,500

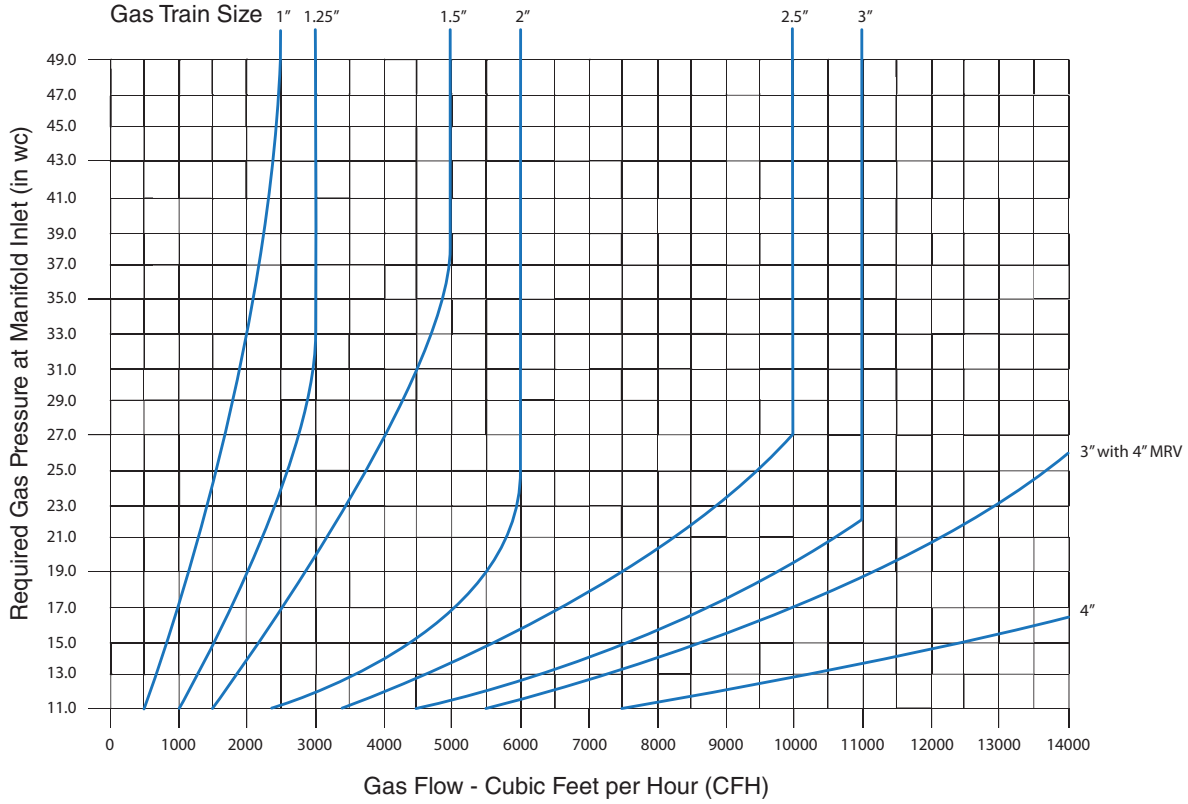
120° F temperature rise is not ETL listed.

Greater than 100° F temperature rise is not ETL listed when LPG is the fuel.

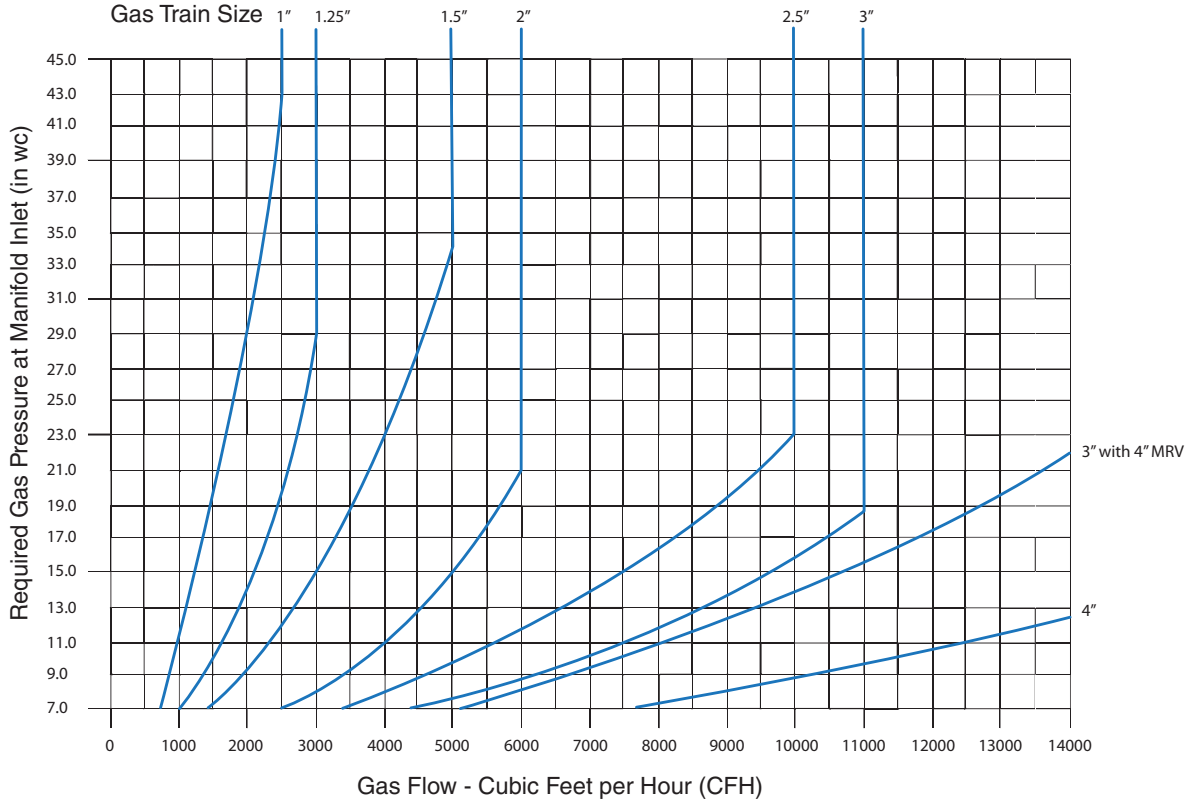
DIRECTIONS:

- Select a point on the chart that represents the intersection of the inlet gas pressure and the gas flow - Cubic Feet per Hour (CFH).
- Select the manifold size to the right of this point.
- For inlet supply gas pressures exceeding 5 PSI, an additional gas regulator is required.

Natural Gas Flow vs. Required Inlet Pressure using an NP1-LE burner



Natural Gas Flow vs. Required Inlet Pressure using an NP2-LE burner



Evaporative Cooling

Formulas	
1	Leaving Dry Bulb = ODB – [SE* x (ODB - OWB)]
2	Leaving Wet Bulb = Entering Wet Bulb (actually, it's slightly less than the entering wet bulb, but is normally considered equal.)
3	Wet Bulb Depression = ODB – OWB
4	Evaporation Rate (GPH) = CFM x WBD x SE/8050
5	Bleed-off Rate = approximately 20% of evaporation rate*
6	Recirculation Rate = approximately 3 times evaporation rate*
7	Standard CFM = Sensible BTU/hr./1.08/(Troom - LDB)
8	CFM = Standard CFM/Density Ratio
9	Density Ratio = 1.325 x barometric pressure/[Temp. (F) + 459]/.07494

* Bleed-off and recirculation rates will vary with locale, water quality and chemical treatment program.
These values are only for approximation.

IMPORTANT NOTE: Refer to saturation efficiency table below.

Abbreviations	
AC	Air Changes
BTUH	British Thermal Units Per Hour
(S)CFM	(Standard) Cubic Feet Per Minute
GPH	Gallons Per Hour
IDB	Indoor (Design) Dry Bulb Temperature
LDB	Leaving Dry Bulb Temperature
LWB	Leaving Wet BulbTemperature
ODB	Outdoor (Design) Dry Bulb Temperature
OWB	Outdoor (Design) Wet Bulb Temperature
SE	Saturation Efficiency of the Evaporative Media
Troom	Temperature in Space Being Controlled
WBD	Wet Bulb Depression

Wet Bulb Depression (°F)	Evaporation Rate - Gallons per Hour (GPH) Per 1,000 Cubic Feet per Minute (CFM) at Stated Saturation Efficiency									
	0.80	0.82	0.84	0.86	0.88	0.90	0.92	0.94	0.96	0.98
5	0.50	0.51	0.52	0.53	0.55	0.56	0.57	0.58	0.60	0.61
10	0.99	1.02	1.04	1.07	1.09	1.12	1.14	1.17	1.19	1.22
15	1.49	1.53	1.56	1.60	1.64	1.68	1.71	1.75	1.79	1.83
20	1.99	2.04	2.09	2.14	2.19	2.23	2.28	2.33	2.38	2.43
25	2.48	2.55	2.61	2.67	2.73	2.79	2.86	2.92	2.98	3.04
30	2.98	3.05	3.13	3.20	3.28	3.35	3.43	3.50	3.58	3.65
35	3.48	3.56	3.65	3.74	3.82	3.91	4.00	4.08	4.17	4.26
40	3.97	40.7	4.17	4.27	4.37	4.47	4.57	4.67	4.77	4.87
45	4.47	4.58	4.69	4.80	4.92	5.03	5.14	5.25	5.36	5.48

- Heat of vaporizaton = 1043 BTU/lb
- Weight of water = 8.34 lb./Gallon
- GPH = CFM x WBD x SE x 1.08/1043/8.34 = CFM x WBD x SE/8050

Suggested Air Changes Per Hour (Air Change Method)		
Leaving Air Temperature (°F DB)	Indoor Air Temperature Above Ambient (°F)*	Air Changes/ Hour**
78°	20°	30 - 60
76° - 78°	15° - 20°	20 - 40
74° - 76°	10° - 15°	15 - 30
72° - 74°	5° - 15°	12 - 20
< 72°	< 10°	10 - 15

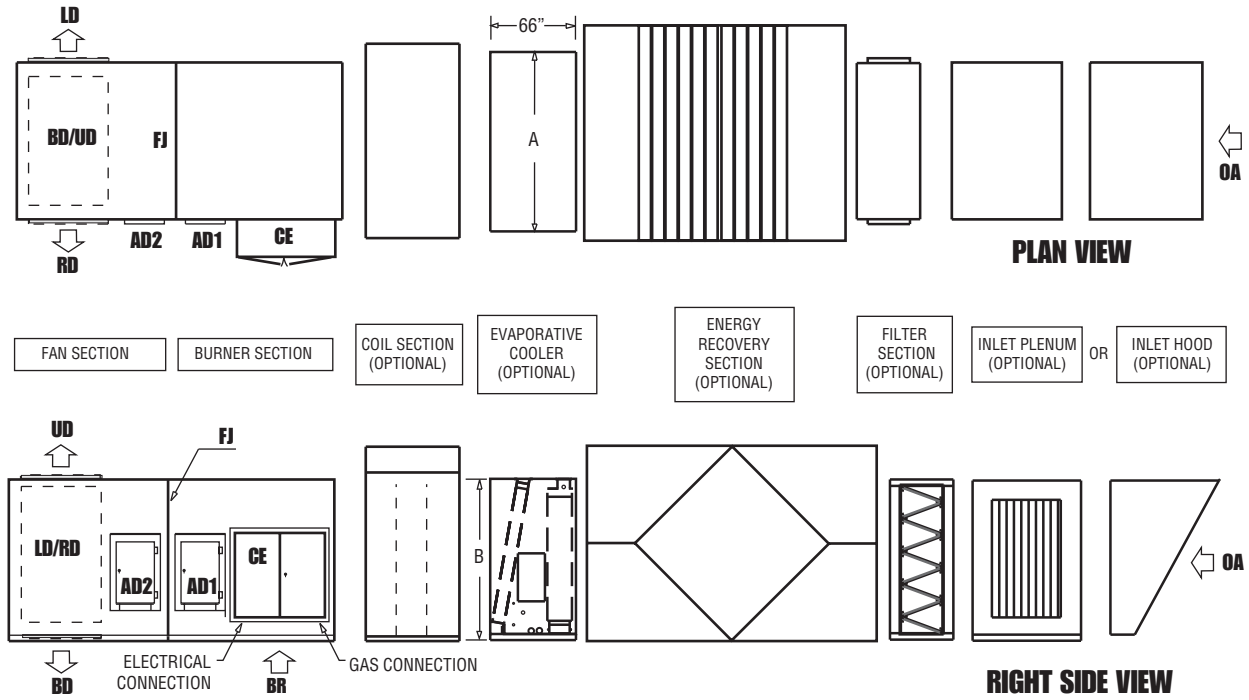
* For existing buildings: Average amount indoor temperature exceeds ambient outdoor temperature when evaporative cooling is not in use.

** Experience has shown that significant benefit can be achieved with 10-15 Air Changes per Hour (AC/Hr) through the lowest 12' of the facility. For a 24' high building, this would mean 5-6 Air Changes per Hour (AC/Hr) for the entire volume. This will vary by application.

Airflow Feet per Minute (FPM)	Saturation Efficiency at Stated Media Depth (in)					
	4"	6"	8"	12"	18"	24"
400	0.55	0.71	0.81	0.90	0.98	0.99
500	0.53	0.68	0.79	0.89	0.98	0.99
600	0.51	0.66	0.77	0.88	0.97	0.99
700	0.50	0.64	0.75	0.87	0.97	0.98

Airflow Feet per Minute (FPM)	Static Pressure Drop (in wc) at Stated Media Depth (in)					
	4"	6"	8"	12"	18"	24"
400	0.04	0.06	0.09	0.14	0.19	0.24
500	0.07	0.09	0.14	0.21	0.30	0.39
600	0.10	0.13	0.20	0.30	0.42	0.55
700	0.19	0.23	0.31	0.44	0.62	0.80

IMPORTANT NOTE: Moisture limiter pressure drop is added for face velocities greater than 600 Feet per Minute (FPM). Rapid Engineering LLC's standard media thickness equals 12".



IMPORTANT NOTE: For unit dimensions, see pages 12, 14, 18. For legends, see pages 13, 15, 17, 19.

MUA Model	750 Feet per Minute (FPM)	550 Feet per Minute (FPM)	750 Feet per Minute (FPM)		550 Feet per Minute (FPM)	
			A	B	A	B
4024	ECM36D	ECM36	58	58	58	58
4036	ECM36D	ECM44	58	58	69	69
4040	ECM44D	ECM54	69	69	85	85
4044	ECM49D	ECM60	76	76	94	94
4049	ECM54D	ECM66	85	85	104	96
4054	ECM54D	ECM73	85	85	112	96
4060	ECM60D	ECM80	94	94	131	112
4066	ECM73D	ECM80	112	96	131	112
4073	ECM80D	N/A	131	112	N/A	N/A

IMPORTANT NOTE: Evaporative Cooling Section is 42". Transition section is 24". Total length is 66".

Leaving Dry Bulb Temperature Drop (500 Feet per Minute (FPM) Face Velocity)

Wet Bulb Depression (°F)	Temperature Drop (°F) For Stated Media Depth (in)					
	4"	6"	8"	12"	18"	24"
10.0	5.3	6.8	7.9	8.9	9.8	9.9
12.5	6.6	8.5	9.8	11.1	12.2	12.3
15.0	7.9	10.2	11.8	13.3	14.6	14.8
17.5	9.2	11.9	13.8	15.6	17.1	17.3
20.0	10.5	13.6	15.8	17.8	19.5	19.7
22.5	11.8	15.3	17.7	20.0	21.9	22.2
25.0	13.2	17.0	19.7	22.2	24.4	24.7
27.5	14.5	18.7	21.7	24.4	26.8	27.2
30.0	15.8	20.4	23.6	26.7	29.3	29.6
32.5	17.1	22.1	25.6	28.9	31.7	32.1
35.0	18.4	23.8	27.6	31.1	34.1	34.6
37.5	19.7	25.5	29.5	33.3	36.6	37.0
40.0	21.1	27.2	31.5	35.6	39.0	39.5

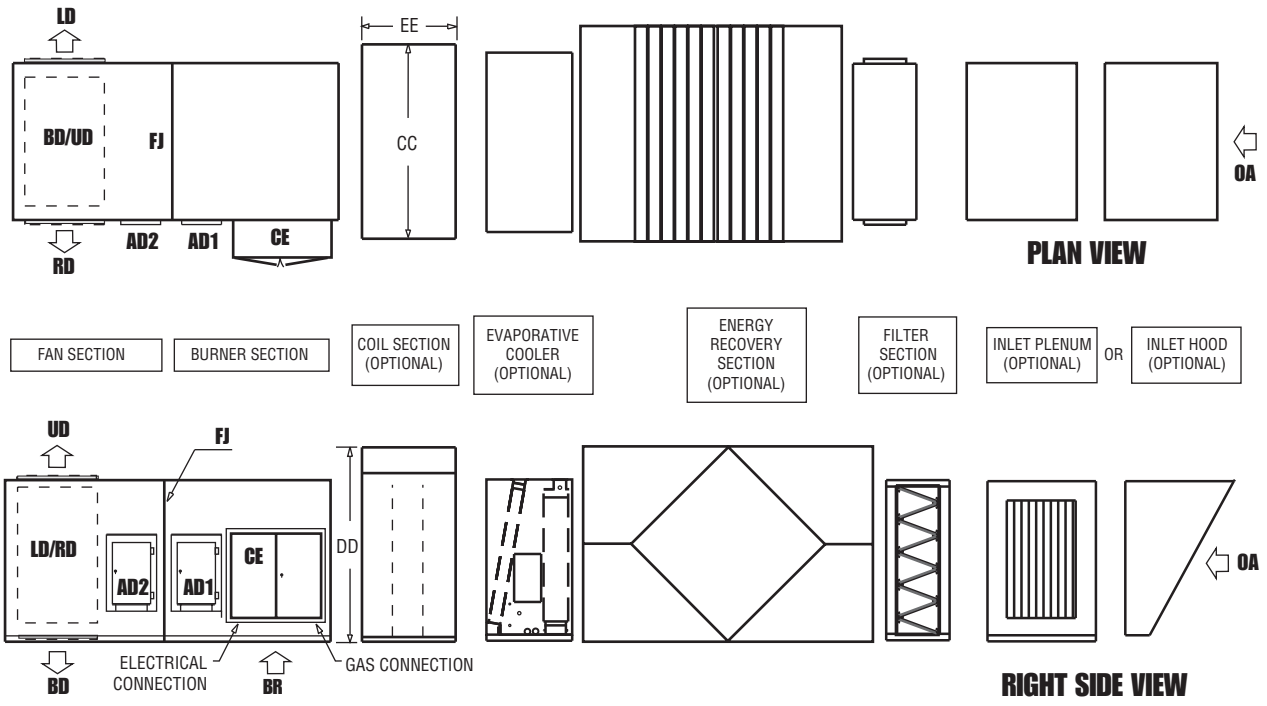
IMPORTANT NOTE: Rapid Engineering LLC's standard media thickness equals 12".

Air Density Ratio

Temperature (°F)	Density Ratio For Stated Elevation (ft/in HG)										
	0/ 29.92	1,000/ 28.86	2,000/ 26.82	3,000/ 26.82	4,000/ 25.84	5,000/ 24.90	6,000/ 23.98	7,000/ 23.09	8,000/ 22.22	9,000/ 21.39	10,000/ 20.58
68°	1.00	0.97	0.93	0.90	0.87	0.84	0.80	0.77	0.75	0.72	0.69
70°	1.00	0.96	0.93	0.90	0.86	0.83	0.80	0.77	0.74	0.71	0.69
72°	1.00	0.96	0.93	0.89	0.86	0.83	0.80	0.77	0.74	0.71	0.69
74°	0.99	0.96	0.92	0.89	0.86	0.83	0.80	0.77	0.74	0.71	0.68
76°	0.99	0.95	0.92	0.89	0.85	0.82	0.79	0.76	0.73	0.71	0.68
78°	0.99	0.95	0.92	0.88	0.85	0.82	0.79	0.76	0.73	0.70	0.68
80°	0.98	0.95	0.91	0.88	0.85	0.82	0.79	0.76	0.73	0.70	0.68

IMPORTANT NOTE: Table to be used when calculating total tonnage of cooling adjusted for elevation.

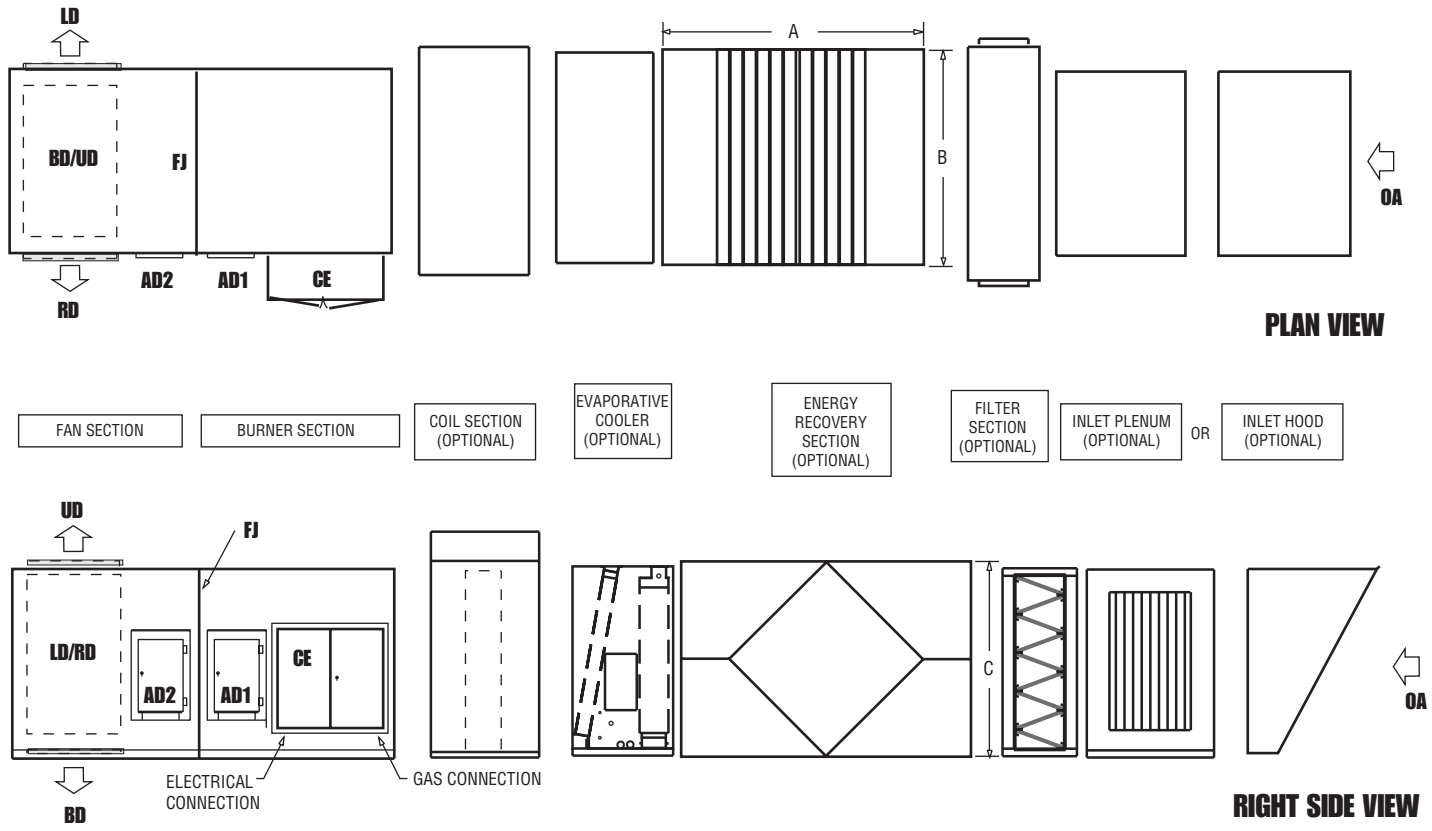
Mechanical Cooling



IMPORTANT NOTE: For unit dimensions, see page 12, 14, 18. For legends, see pages 13, 15, 17, 19.

Airflow - Cubic Feet per Minute (CFM)	Compatible Cabinet Sizes	Range Of Available Tons Of Cooling	Quantity Of Coils	Square Feet	Fin Area (L x H) Of Each Coil (in)*	Coil Face Velocity		Width	Height	Length
						Low	High	CC	DD	EE
3,000-7,000	24	8-35	1	13.8	33 x 60	218	509	68	40	72
7,001-10,000	24	18-50	1	18.0	36 x 72	389	556	80	44	72
10,001-20,000	36-40	25-100	2	38.3	27 x 102	261	523	110	65	72
20,001-27,500	36-44	50-138	2	52.5	35 x 108	381	524	116	80	78
27,501-30,000	40-49	69-150	2	61.2	39 x 113	449	490	121	90	78
30,001-35,000	49-60	75-175	2	70.0	41 x 123	428	500	131	96	84
35,001-50,000	60-73	88-250	2	93.8	45 x 150	373	533	158	105	84
50,001-60,000	66-80	125-300	3	106.5	36 x 142	469	563	150	126	102
60,001-65,000	73-89	150-325	3	117.0	36 x 156	513	556	164	126	102

Airflow - Cubic Feet per Minute (CFM)	0% OA/ 100% RA	25% OA/ 75% RA	50% OA/ 50% RA	75% OA/ 25% RA	100% OA/ 0% RA
	Estimated tons of cooling required to achieve 55/54 leaving air condition (chart based on OA conditions of 94/74 and RA conditions of 80/67)				
5,000	16	19	22	24	27
7,500	24	28	33	35	41
10,000	32	38	44	47	54
12,500	39	47	55	59	68
15,000	47	56	66	71	81
20,000	63	75	88	95	108
25,000	79	94	110	118	135
30,000	95	113	132	142	162
35,000	110	131	154	165	189
40,000	126	150	176	189	216
45,000	142	169	197	213	243
50,000	158	188	219	236	270
55,000	173	206	241	260	297
60,000	189	225	263	284	324
65,000	205	244	285	308	351



IMPORTANT NOTE: For unit dimensions, see page 12, 14, 18. For legends, see pages 13, 15, 17, 19.

Model	Airflow - Cubic Feet per Minute (CFM)	Length	Width	Height
		A	B	C
4024	4,000-7,000	109	58	69
4036	7,001-15,000	120	85	94
4036	15,001-20,000	130	94	96
4040	20,001-25,000	137	94	123
4040	25,001-30,000	140	108	123
4044	30,001-35,000	150	131	123
4049	35,001-40,000	160	146	123
4054	40,001-50,000	164	178	123
4060	50,001-60,000	164	212	123

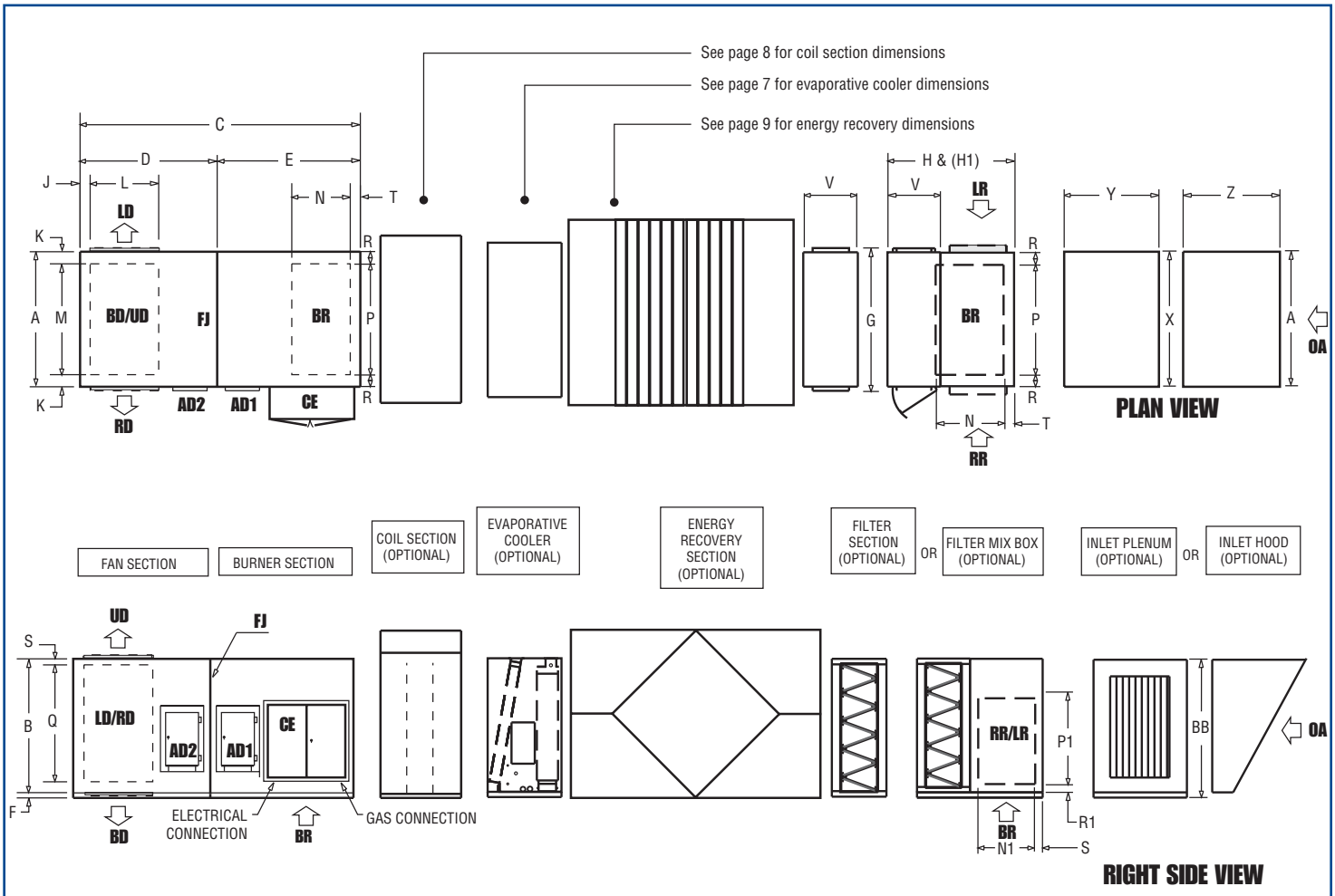
Energy Recovery

Model	Supply Air Standard Cubic Feet per Minute (SCFM)	Pressure Drop Supply (in wc)	Efficiency Supply	Air Velocity Supply (face/channel) (ft/min)	Section Weights						
					Inlet Hoods	Downturn Section	Filter Housing	Module	Exhaust Fan	Discharge Hood	Duct Flange/ Plate
4024	4,000	0.42	59%	329.19 / 851.18	150	250	225	1,000	400	150	100
	5,000	0.63	60%	411.49 / 1,064.04							
	6,000	0.88	59%	493.79 / 1,276.74							
	7,000	1.17	59%	576.09 / 1,489.31							
4036	7,000	0.29	63%	240.04 / 632.20	200	450	425	1,900	550	200	150
	8,000	0.37	63%	274.33 / 722.60							
	9,000	0.45	63%	308.62 / 812.94							
	10,000	0.55	63%	342.91 / 903.25							
	11,000	0.66	63%	377.20 / 993.53							
	12,000	0.77	63%	411.49 / 1,083.78							
	13,000	0.89	63%	445.78 / 1,174.00							
	14,000	1.03	63%	480.08 / 1,264.21							
	15,000	1.17	63%	514.37 / 1,354.39							
4036	15,000	0.70	62%	403.43 / 1,021.84	200	450	425	2,000	800	225	200
	16,000	0.79	62%	430.32 / 1,089.88							
	17,000	0.88	62%	457.22 / 1,157.91							
	18,000	0.98	62%	484.11 / 1,225.92							
	19,000	1.08	62%	511.01 / 1,293.92							
	20,000	1.19	61%	537.90 / 1,361.91							
4040	20,000	0.72	62%	457.22 / 1,130.29	300	550	475	2,700	800	250	200
	21,000	0.79	61%	480.08 / 1,186.72							
	22,000	0.87	61%	502.94 / 1,243.14							
	23,000	0.94	61%	525.80 / 1,299.55							
	24,000	1.02	61%	548.66 / 1,355.95							
	25,000	1.10	61%	571.52 / 1,412.35							
4040	25,000	0.83	61%	489.87 / 1,218.80	300	600	550	2,900	800	250	250
	26,000	0.90	61%	509.47 / 1,267.47							
	27,000	0.96	61%	529.06 / 1,316.14							
	28,000	1.03	61%	548.66 / 1,364.80							
	29,000	1.10	61%	568.25 / 1,413.45							
	30,000	1.17	61%	587.85 / 1,462.10							
4044	30,000	0.87	61%	493.79 / 1,243.14	300	750	600	4,800	1,280	275	300
	31,000	0.92	61%	510.25 / 1,284.50							
	32,000	0.98	61%	526.71 / 1,325.87							
	33,000	1.03	61%	543.17 / 1,367.23							
	34,000	1.09	61%	559.63 / 1,408.59							
	35,000	1.15	61%	576.09 / 1,449.94							
4049	35,000	0.93	61%	514.37 / 1,289.10	350	750	675	5,000	1,490	300	300
	36,000	0.98	61%	529.06 / 1,325.87							
	37,000	1.03	61%	543.76 / 1,362.63							
	38,000	1.08	61%	558.46 / 1,399.40							
	39,000	1.13	61%	573.15 / 1,436.16							
	40,000	1.19	61%	587.85 / 1,472.92							
4054	40,000	0.79	61%	477.09 / 1,184.03	350	1,050	800	5,800	1,673	300	400
	42,000	0.87	61%	500.95 / 1,243.14							
	44,000	0.94	61%	524.80 / 1,302.23							
	46,000	1.02	61%	548.66 / 1,361.32							
	48,000	1.11	61%	572.51 / 1,420.40							
	50,000	1.20	61%	596.37 / 1,479.48							
4060	50,000	0.83	61%	489.87 / 1,218.80	400	1,300	925	6,400	1,924	325	450
	52,000	0.90	61%	509.47 / 1,267.47							
	54,000	0.96	61%	529.06 / 1,316.14							
	56,000	1.03	61%	548.66 / 1,364.80							
	58,000	1.10	61%	568.25 / 1,413.45							
	60,000	1.17	61%	587.85 / 1,462.10							

IMPORTANT NOTE: Model sizes apply to MUA style cabinets. Consult factory when selecting energy recovery for AM style cabinets. All weights are in pounds.

Model	Exhaust Air Standard Cubic Feet per Minute (SCFM)	Pressure Drop Exhaust (in wc)	Efficiency Exhaust	Air Velocity Exhaust (face/channel) (ft/min)
4024	4,000	0.45	59%	367.34 / 889.82
	5,000	0.67	60%	459.17 / 1,112.20
	6,000	0.94	59%	551.01 / 1,334.75
	7,000	1.25	59%	642.84 / 1,557.43
4036	7,000	0.30	61%	267.85 / 658.93
	8,000	0.39	61%	306.12 / 752.99
	9,000	0.48	61%	344.38 / 847.09
	10,000	0.59	61%	382.64 / 941.23
	11,000	0.70	61%	420.91 / 1,035.40
	12,000	0.82	61%	459.17 / 1,129.59
	13,000	0.95	61%	497.44 / 1,223.81
	14,000	1.09	61%	535.70 / 1,318.05
	15,000	1.24	61%	573.97 / 1,412.31
4036	15,000	0.74	61%	450.17 / 1,065.94
	16,000	0.84	60%	480.18 / 1,137.09
	17,000	0.94	60%	510.19 / 1,208.25
	18,000	1.05	60%	540.20 / 1,279.42
	19,000	1.16	60%	570.22 / 1,350.60
	20,000	1.27	60%	600.23 / 1,421.78
4040	20,000	0.77	60%	510.19 / 1,179.84
	21,000	0.85	60%	535.70 / 1,238.92
	22,000	0.92	60%	561.21 / 1,297.99
	23,000	1.00	60%	586.72 / 1,356.99
	24,000	1.09	59%	612.23 / 1,415.99
	25,000	1.17	59%	637.74 / 1,474.99
4040	25,000	0.89	60%	546.64 / 1,272.52
	26,000	0.96	60%	568.50 / 1,323.44
	27,000	1.03	60%	590.37 / 1,374.35
	28,000	1.10	59%	612.23 / 1,425.25
	29,000	1.17	59%	634.10 / 1,476.15
	30,000	1.25	59%	655.96 / 1,527.05
4044	30,000	0.92	60%	551.01 / 1,297.99
	31,000	0.98	60%	569.38 / 1,341.26
	32,000	1.04	60%	587.74 / 1,384.53
	33,000	1.10	59%	606.11 / 1,427.79
	34,000	1.17	59%	624.48 / 1,471.06
	35,000	1.23	59%	642.84 / 1,514.32
4049	35,000	0.99	60%	573.97 / 1,346.07
	36,000	1.04	60%	590.37 / 1,384.53
	37,000	1.10	59%	606.77 / 1,422.98
	38,000	1.15	59%	623.16 / 1,461.44
	39,000	1.21	59%	639.56 / 1,499.90
	40,000	1.27	59%	655.96 / 1,538.36
4054	40,000	0.84	60%	532.38 / 1,236.11
	42,000	0.92	60%	558.99 / 1,297.99
	44,000	1.01	60%	585.61 / 1,359.80
	46,000	1.09	59%	612.23 / 1,421.61
	48,000	1.18	59%	638.85 / 1,483.42
	50,000	1.28	59%	665.47 / 1,545.23
4060	50,000	0.89	60%	546.64 / 1,272.52
	52,000	0.96	60%	568.50 / 1,323.44
	54,000	1.03	60%	590.37 / 1,374.35
	56,000	1.10	59%	612.23 / 1,425.25
	58,000	1.17	59%	634.10 / 1,476.15
	60,000	1.25	59%	655.96 / 1,527.05

4000 AM Horizontal Model Dimensions



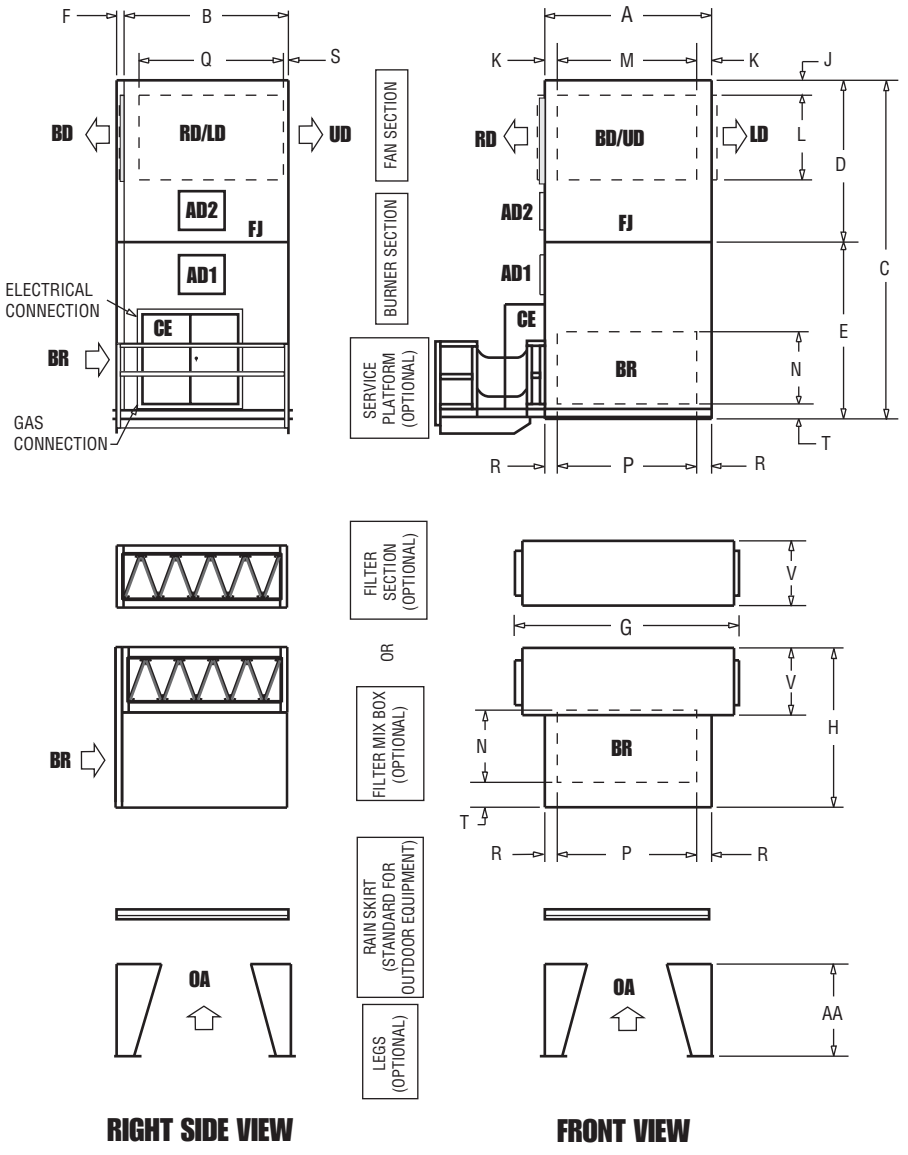
Model	Air Handler					Base Frame Formed Channel	Base Frame Structural Angle	Filter Section Width	Filter Mixbox Length	Filter Mixbox Length With Side Return			Discharge Length	Discharge Width	Return Air Length	Return Air Length	Return Air Width	Return Air Height	Discharge Height					Filter Length	Plenum Width	Plenum Length	Inlet Hood Length	Minimum Leg Height	Plenum Height
	Width	Height	Length																										
	A	B	C	D	E	F		G	H	H1	J	K	L	M	N	N1	P	P1	Q	R	R1	S	T	V	X	Y	Z	AA	BB
4024	40	40	109	-		4	-	62	62	62	4	5.5	20	29	18	27	32	22	34	4	2	3	10	30	40	60	48	36	40
4036	58	58	120	-		4	-	62	66	77	5	5.5	25	47	26	41	50	32	50	4	2	3	4	30	63	77	72	36	63
4040	63	63	130	-		4	-	81	68	77	6	6.5	33	50	30	41	55	40	53	4	2	3	4	30	63	77	84	36	63
4044	69	69	137	-		4	-	81	70	79	6	6.5	36	56	32	43	61	46	59	4	2	3	4	30	76	84	84	36	76
4049	76	76	140	-		4	-	81	72	80	6	6.5	39	63	34	44	68	53	66	4	2	3	4	30	76	84	84	36	76
4054	85	85	144	86	58	6	-	100	77	90	6	6.5	43	72	39	55	77	55	75	4	2	3	4	30	94	77	96	48	94
4060	94	94	154	90	64	6	-	100	77	85	6	6.5	48	81	38	50	86	65	84	4	2	3	4	30	94	77	96	48	94
4066	104	96	158	94	64	6	-	119	84	100	6	6.5	50	91	45	65	96	67	90	4	2	3	4	30	112	120	96	48	96
4073	112	96	163	94	69	-	3	119	84	107	6	6.5	50	99	44	72	104	64	90	4	2	3	4	30	112	120	96	48	96
4080	131	112	171	75	96	-	4	139	94	112	6	7.5	60	116	48	77	123	76	106	4	2	3	4	30	131	138	96	48	112
4089	131	112	177	81	96	-	4	139	94	112	6	7.5	60	116	48	77	123	76	106	4	2	3	4	30	131	138	96	48	112

4000 AM Upright Model Dimensions

LEGEND
OA = Outside Air
CE = Control Enclosure
BD = Bottom Discharge
LD = Left Discharge
RD = Right Discharge
UD = Up Discharge
BR = Bottom Return
RR = Right Return
LR = Left Return
FJ = Field Joint (Models 4054 - 4089)
AD1 = Access Door (Models 4080 & 4089)
AD2 = Access Door (Models 4024 - 4073)

IMPORTANT NOTES:

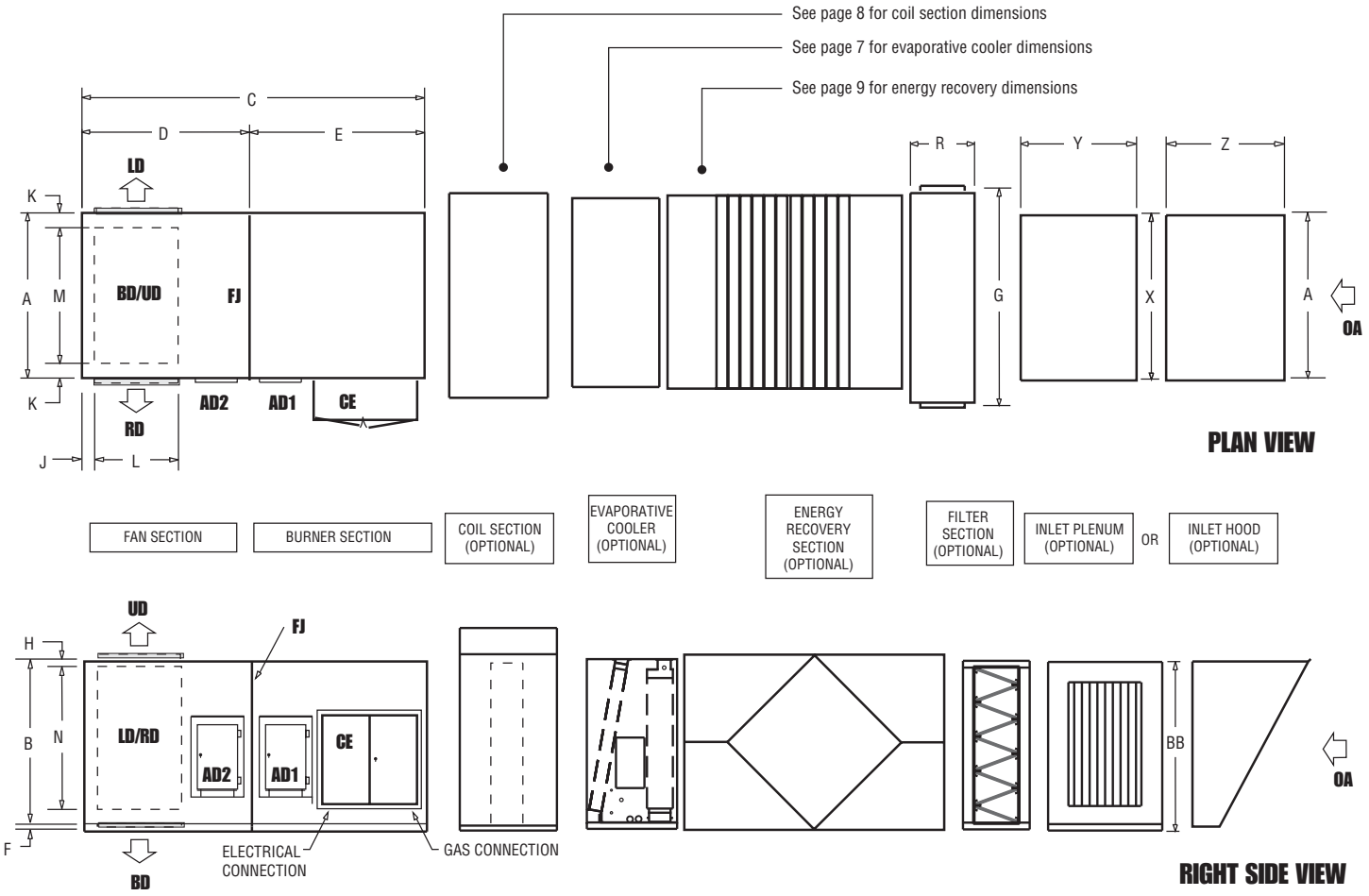
- All dimensions are in inches.
- All weights are in pounds.
- All dimensions and weights are subject to change without notice.
- Dimensions apply to both horizontal and upright units.
- Filters are shipped loose.
- Legs are shipped loose.
- Control enclosure for 3" or smaller manifolds is 57" H x 57" W x 25" D. (B dimension of Model 4024 cabinet size is approximately 20" smaller than the control enclosure. Model 4049 control enclosure is 57" H x 57" W x 20" D.)
- To minimize water entrainment, an inlet hood with moisture limiter or inlet plenum is recommended.
- Outdoor air duct size varies. Consult Rapid Engineering LLC.
- Control enclosure can be located on left or right side of unit. (Shown on right side in drawings)



Model	Approximate Shipping Weights											
	Horizontal Fan Section	Horizontal Burner Section	Horizontal Service Platforms			Filter Section	Filter Mixbox	Inlet Hood	Inlet Plenum	Upright Service Platform	Upright Fan Section	Upright Burner Section
			Basic	With OA* Add	With FMB** Add							
4024	1,254		475	70	190	320	611	80	343	340	1,289	
4036	2,110		520	70	205	465	843	135	657	430	2,129	
4040	2,427		606	69	209	525	1,012	210	661	470	2,443	
4044	2,783		630	70	215	600	1,122	226	866	500	2,816	
4049	3,114		650	68	230	640	1,230	248	870	525	3,150	
4054	2,383	1,671	675	66	235	685	1,597	370	1,150	580	2,373	1,754
4060	2,673	1,936	710	70	240	760	1,707	395	1,157	600	2,663	2.029
4066	2,961	2,126	735	65	275	875	2,084	410	1,635	620	3,129	2,228
4073	4,219	2,332	760	65	275	1,125	2,220	425	2,052	630	4,553	2,541
4080	3,667	4,790	805	70	310	1,400	2,776	590	2,128	720	4,002	4,924
4089	4,101	4,849	820	70	310	1,400	2,776	590	2,128	720	4,503	4,983

* Outside Air * * Filter Mix Box

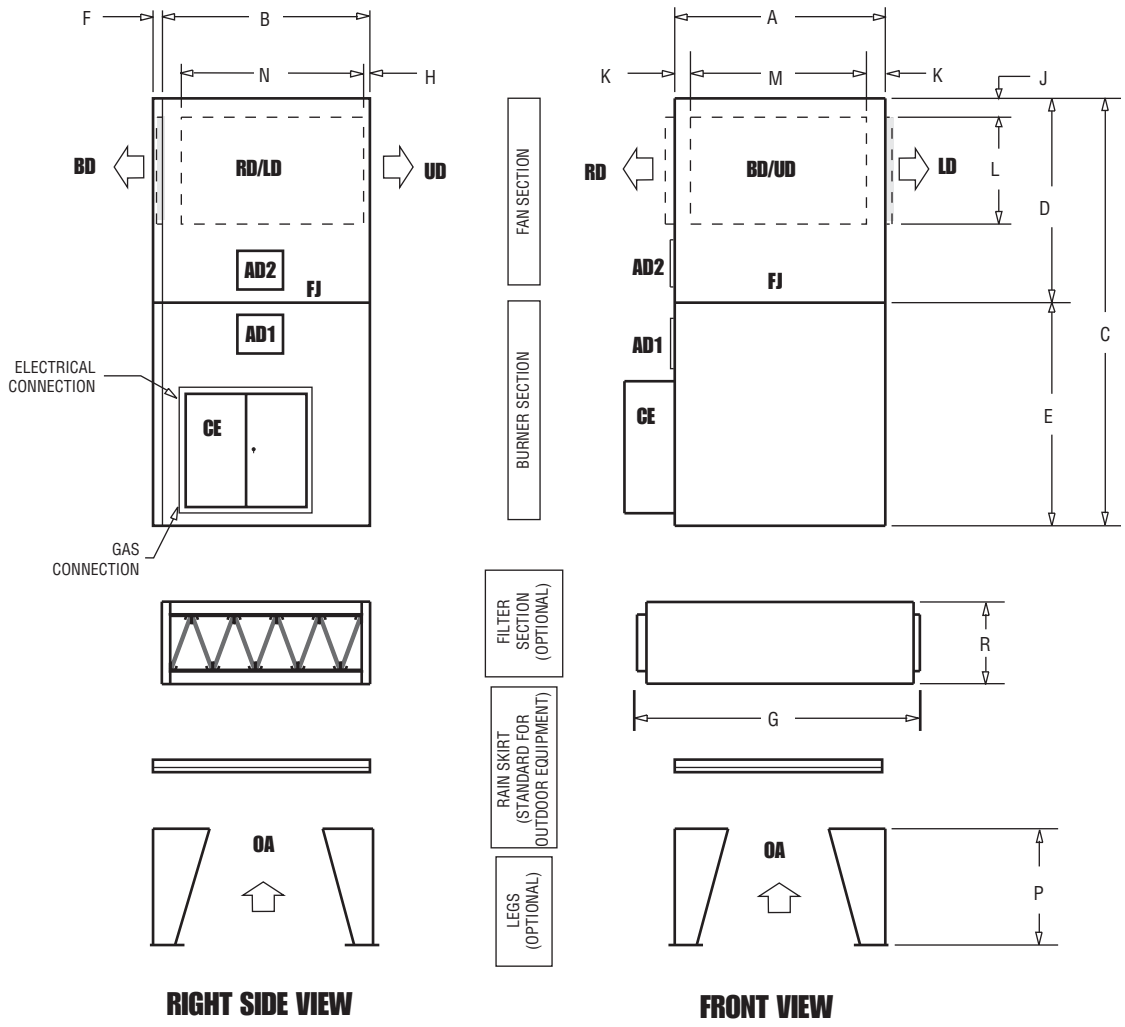
4000 MUA Horizontal Model Dimensions



Model	Air Handler					Base Frame Formed Channel	Base Frame Structural Angle	Filter Section Width				Discharge Length	Discharge Width	Discharge Height	Minimum Leg Height	Filter Section Length	Plenum Width	Plenum Length	Inlet Hood Length	Plenum Height
	Width	Height	Length																	
	A	B	C	D	E	F		G	H	J	K	L	M	N	P	R	X	Y	Z	BB
4024	40	40	109	-		4	-	62	3	4	5.5	20	29	34	36	30	52	60	48	40
4036	58	58	120	-		4	-	62	3	5	5.5	25	47	50	36	30	63	77	72	63
4040	63	63	130	-		4	-	81	3	6	6.5	33	50	53	36	30	76	84	84	63
4044	69	69	137	-		4	-	81	3	6	6.5	36	56	59	36	30	76	84	84	76
4049	76	76	140	-		4	-	81	3	6	6.5	39	63	66	36	30	94	77	84	76
4054	85	85	144	86	58	6	-	100	3	6	6.5	43	72	75	48	30	94	77	96	94
4060	94	94	154	90	64	6	-	100	3	6	6.5	48	81	84	48	30	112	120	96	94
4066	104	96	158	94	64	6	-	119	3	6	6.5	50	91	90	48	30	112	120	96	96
4073	112	96	163	94	69	-	3	119	3	6	6.5	50	99	90	48	30	131	138	96	96
4080	131	112	162	75	87	-	4	139	3	6	7.5	60	116	106	48	30	131	138	96	112
4089	131	112	168	81	87	-	4	139	3	6	7.5	60	116	106	48	30	131	138	96	112

Model	Approximate Shipping Weights				
	Horizontal Fan Section	Horizontal Burner Section	Filter Section	Inlet Hood	Inlet Plenum
4024	1,325		320	80	452
4036	2,110		465	135	657
4040	2,530		525	210	862
4044	2,783		600	226	866
4049	3,305		640	248	1,126
4054	2,518	1,695	685	370	1,150
4060	2,808	1,973	760	395	1,627
4066	3,036	2,159	875	410	1,635
4073	4,525	2,361	1,125	425	2,052
4080	3,667	4,790	1,400	590	2,128
4089	4,101	5,210	1,400	590	2,128

4000 MUA Upright Model Dimensions



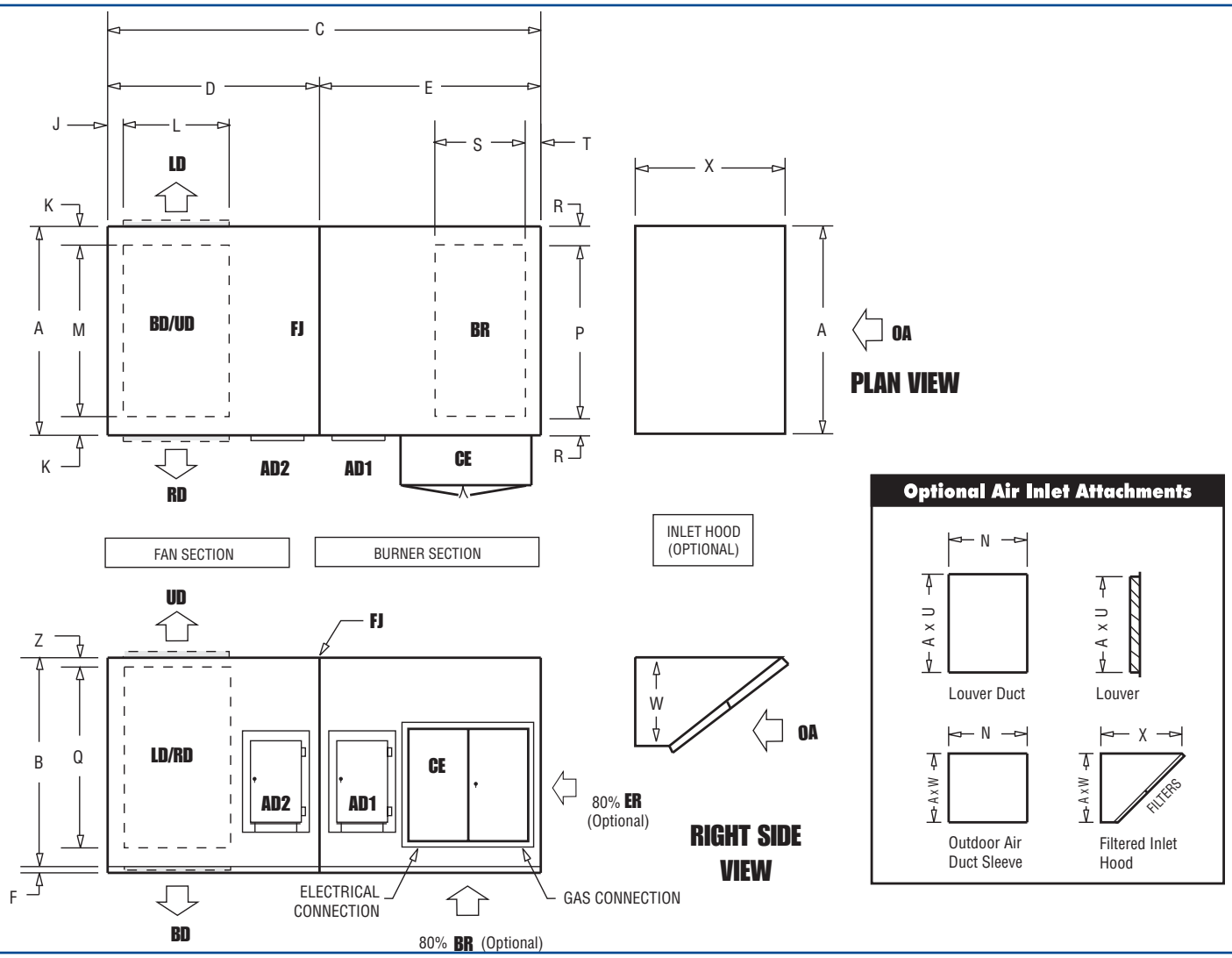
LEGEND
OA = Outside Air
CE = Control Enclosure
BD = Bottom Discharge
LD = Left Discharge
RD = Right Discharge
UD = Up Discharge
FJ = Field Joint (Models 4054 - 4089)
AD1 = Access Door (Models 4080 & 4089)
AD2 = Access Door (Models 4024 - 4073)

IMPORTANT NOTES:

- All dimensions are in inches.
- All weights are in pounds.
- All dimensions and weights are subject to change without notice.
- Dimensions apply to both horizontal and upright units.
- Filters are shipped loose.
- Legs are shipped loose.
- Control enclosure for 3" or smaller manifolds is 57" H x 57" W x 25" D. (B dimension of Model 4024 cabinet size is approximately 20" smaller than the control enclosure. Model 4049 control enclosure is 57" H x 57" W x 20" D.)
- To minimize water entrainment, an inlet hood with moisture limiter or inlet plenum is recommended.
- Outdoor air duct size varies. Consult Rapid Engineering LLC.
- Control enclosure can be located on left or right side of unit. (Shown on right side in drawings)

Model	Approximate Shipping Weights	
	Upright Fan Section	Upright Burner Section
4024	1,360	
4036	2,129	
4040	2,546	
4044	2,816	
4049	3,341	
4054	2,508	1,760
4060	2,798	2,076
4066	3,204	2,234
4073	4,859	2,441
4080	4,002	4,624
4089	4,503	5,044

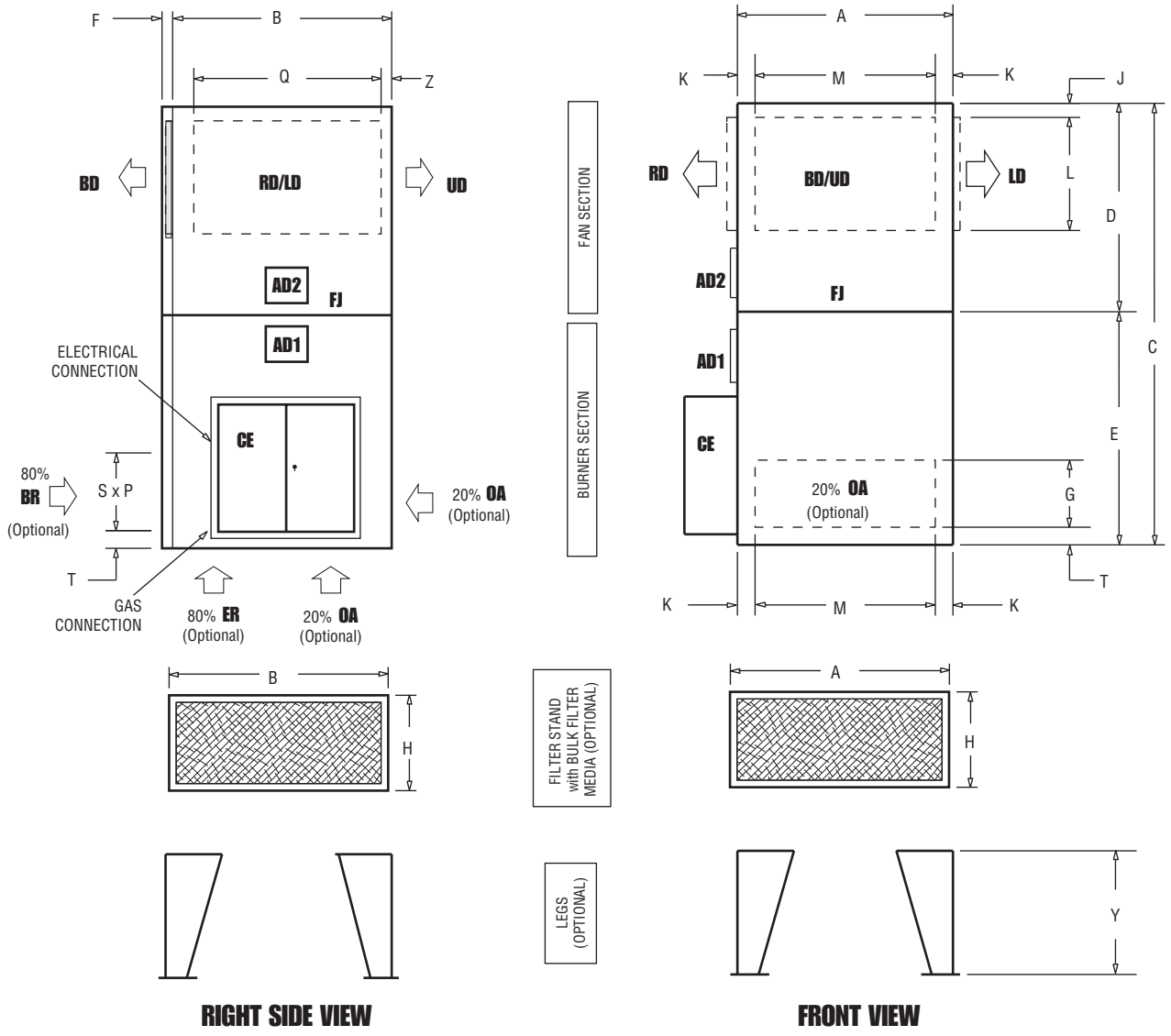
4000 FR Horizontal Model Dimensions



Model	Air Handler					Base Frame Formed Channel	Base Frame Structural Angle	Outside Air Length	Filter Stand Height			Discharge Length	Discharge Width	Discharge Length	Return Air Width	Discharge Height		Return Air Length		Louver Height	Inlet Hood / Duct Height	Inlet Hood Length	Minimum Leg Height	
	Width	Height	Length																					
	A	B	C	D	E	F		G	H	J	K	L	M	N	P	Q	R	S	T	U	W	X	Y	Z
4024	40	40	109	-		4	-	10	24	4	5.5	20	29	30	32	34	4	18	10	28	21	27	36	3
4036	58	58	120	-		4	-	12	36	5	5.5	25	47	30	50	50	4	26	4	34	30	35	36	3
4040	63	63	130	-		4	-	12	36	6	6.5	33	50	30	55	53	4	30	4	34	32.5	37	36	3
4044	69	69	137	-		4	-	16	36	6	6.5	36	56	30	61	59	4	32	4	45	35.5	39	36	3
4049	76	76	140	-		4	-	16	36	6	6.5	39	63	30	68	66	4	34	4	45	39	42	36	3
4054	85	85	144	86	58	6	-	16	36	6	6.5	43	72	30	77	75	4	39	4	45	43.5	46	48	3
4060	94	94	154	90	64	6	-	20	36	6	6.5	48	81	30	86	84	4	38	4	56	48	50	48	3
4066	104	96	158	94	64	6	-	20	48	6	6.5	50	91	30	96	90	4	45	4	56	49	51	48	3
4073	112	96	163	94	69	-	3	24	60	6	6.5	50	99	30	104	90	4	44	4	68	49	51	48	3
4080	131	112	171	75	96	-	4	24	60	6	7.5	60	116	30	123	106	4	48	4	68	57	57	48	3
4089	131	112	177	81	96	-	4	24	60	6	7.5	60	116	30	123	106	4	48	4	68	57	57	48	3

Model	Approximate Shipping Weights			
	Horizontal Fan Section	Horizontal Burner Section	Filter Section	Inlet Hood
4024	1,245		320	80
4036	2,055		465	135
4040	2,354		525	210
4044	2,716		600	226
4049	3,034		640	248
4054	2,383	1,470	685	370
4060	2,673	1,712	760	395
4066	2,961	1,847	875	410
4073	4,219	1,994	1,125	425
4080	3,667	4,359	1,400	590
4089	4,101	4,418	1,400	590

4000 FR Upright Model Dimensions



RIGHT SIDE VIEW **FRONT VIEW**

LEGEND

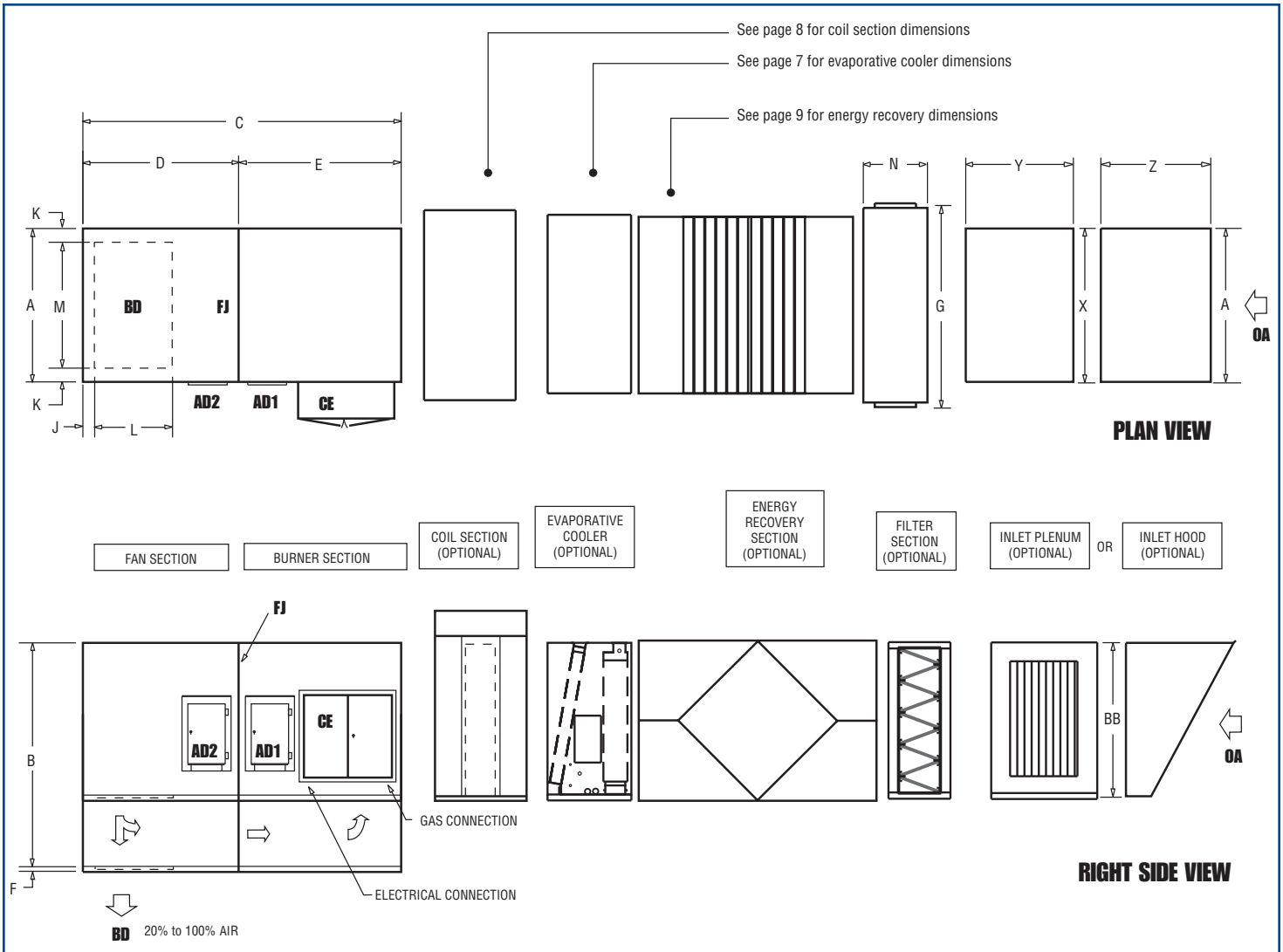
OA = Outside Air
CE = Control Enclosure
BD = Bottom Discharge
LD = Left Discharge
RD = Right Discharge
UD = Up Discharge
BR = Bottom Return
ER = End Return
FJ = Field Joint (Models 4054 - 4089)
AD1 = Access Door (Models 4080 & 4089)
AD2 = Access Door (Models 4024 - 4073)

IMPORTANT NOTES:

- All dimensions are in inches.
- All weights are in pounds.
- All dimensions and weights are subject to change without notice.
- Dimensions apply to both horizontal and upright units.
- Filters are shipped loose.
- Legs are shipped loose.
- Control enclosure for 3" or smaller manifolds is 57" H x 57" W x 25" D. (B dimension of Model 4024 cabinet size is approximately 20" smaller than the control enclosure. Model 4049 control enclosure is 57" H x 57" W x 20" D.)
- Outdoor air duct size varies. Consult Rapid Engineering LLC.
- Control enclosure can be located on left or right side of unit. (Shown on right side in drawings)

Model	Approximate Shipping Weights		
	Upright Fan Section	Upright Burner Section	Filter Stand
4024	1,230		95
4036	2,054		140
4040	2,360		150
4044	2,704		160
4049	3,017		175
4054	2,373	1,553	320
4060	2,663	1,805	350
4066	3,129	1,949	400
4073	4,553	2,203	450
4080	4,002	4,493	500
4089	4,503	4,552	500

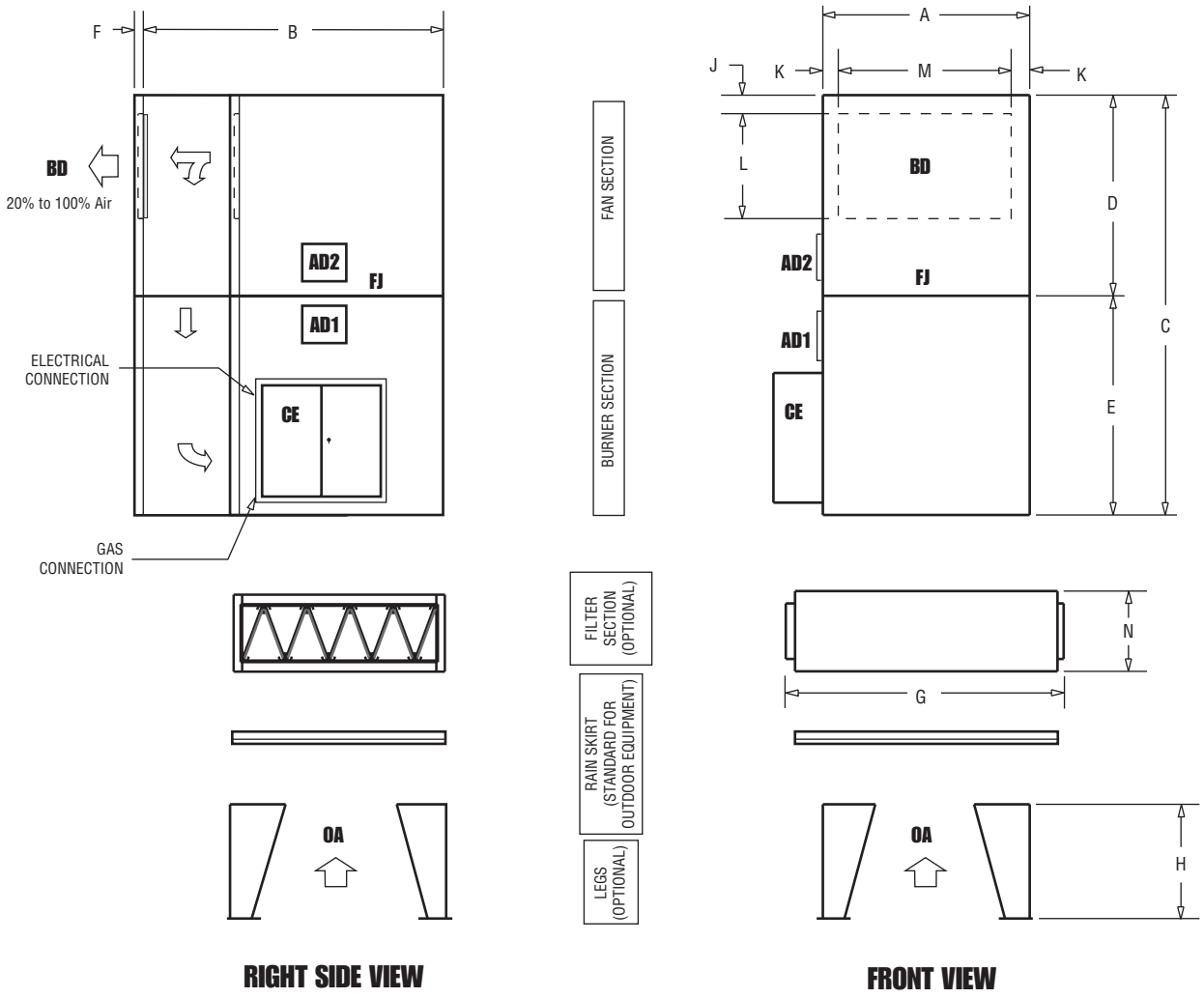
4000 VAV Horizontal Model Dimensions



Model	Air Handler					Base Frame Formed Channel	Base Frame Structural Angle	Filter Section Width	Minimum Leg Height			Discharge Length	Discharge Width	Filter Section Length	Plenum Width	Plenum Length	Inlet Hood Length	Plenum Height
	Width	Height	Length															
	A	B	C	D	E	F		G	H	J	K	L	M	N	X	Y	Z	BB
4024	40	59	109	-		4	-	62	36	4	5.5	24	29	30	40	60	48	40
4036	58	84	120	-		4	-	62	36	5	5.5	32	47	30	63	77	72	63
4040	63	94	130	-		4	-	81	36	6	6.5	35	50	30	63	77	84	63
4044	69	102	137	-		4	-	81	36	6	6.5	35	56	30	76	84	84	76
4049	76	109	140	-		4	-	81	36	6	6.5	40	63	30	76	84	84	76
4054	85	124	144	86	58	6	-	100	48	6	6.5	40	72	30	94	77	96	94
4060	94	138	154	90	64	6	-	100	48	6	6.5	43	81	30	94	77	96	94
4066	104	140	158	94	64	6	-	119	48	6	6.5	43	91	30	112	120	96	96
4073	112	137	163	94	69	-	3	119	48	6	6.5	43	99	30	112	120	96	96
4080	131	156	171	75	96	-	4	139	48	6	7.5	43	116	30	131	138	96	112
4089	131	156	177	81	96	-	4	139	48	6	7.5	43	116	30	131	138	96	112

Model	Approximate Shipping Weights				
	Horizontal Fan Section	Horizontal Burner Section	Filter Section	Inlet Hood	Inlet Plenum
4024	1,564		320	80	343
4036	2,585		465	135	657
4040	2,982		525	210	661
4044	3,413		600	226	866
4049	3,804		640	248	870
4054	2,953	2,061	685	370	1,150
4060	3,333	2,396	760	395	1,157
4066	3,711	2,626	875	410	1,635
4073	4,959	2,842	1,125	425	2,052
4080	4,537	5,640	1,400	590	2,128
4089	4,971	5,699	1,400	590	2,128

4000 VAV Upright Model Dimensions



LEGEND

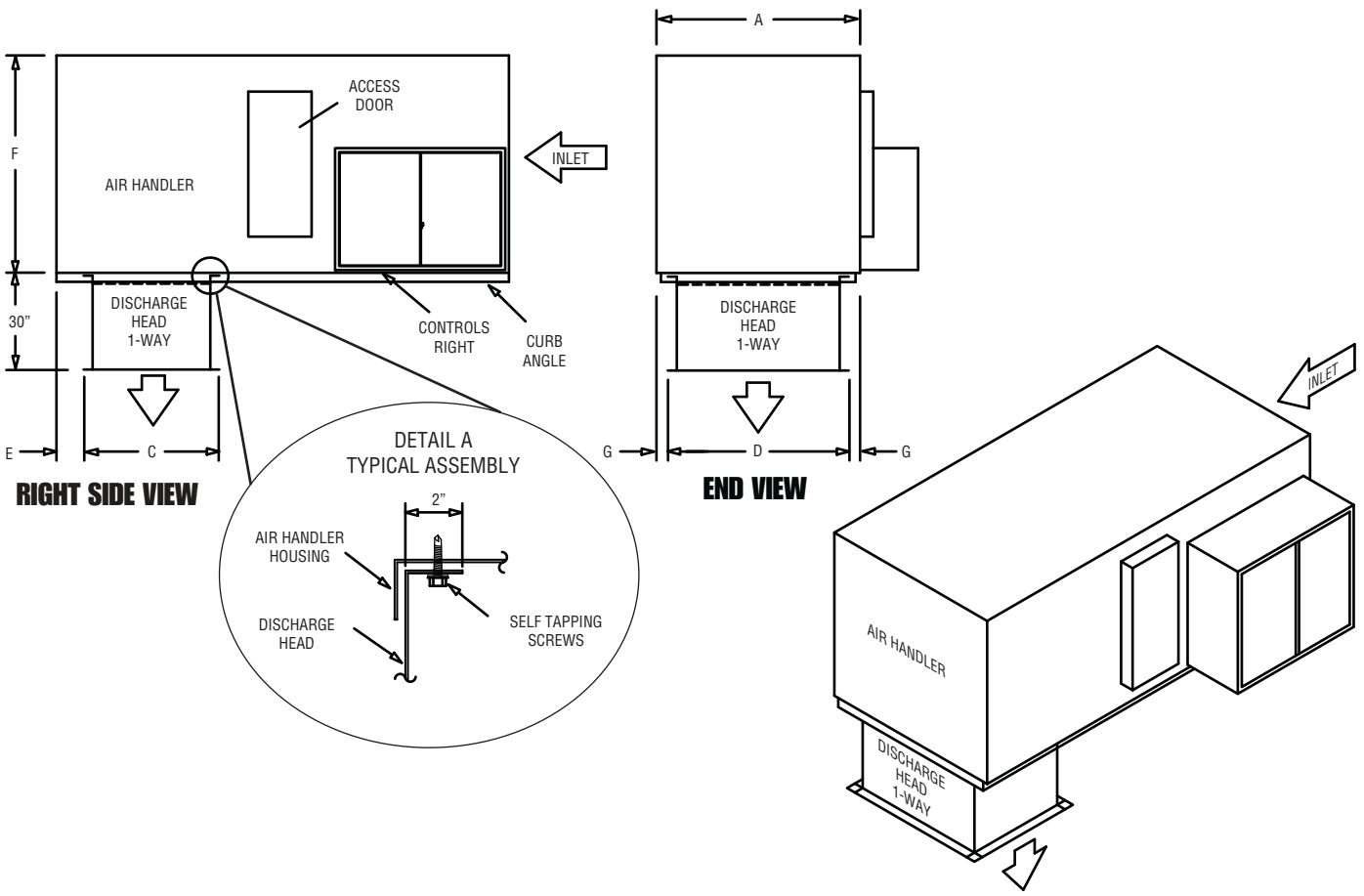
OA = Outside Air
CE = Control Enclosure
BD = Bottom Discharge
FJ = Field Joint (Models 4054 - 4089)
AD1 = Access Door (Models 4080 & 4089)
AD2 = Access Door (Models 4024 - 4073)

IMPORTANT NOTES:

- All dimensions are in inches.
- All weights are in pounds.
- All dimensions and weights are subject to change without notice.
- Dimensions apply to both horizontal and upright units.
- Filters are shipped loose.
- Legs are shipped loose.
- Control enclosure for 3" or smaller manifolds is 57" H x 57" W x 25" D. (B dimension of Model 4024 cabinet size is approximately 20" smaller than the control enclosure. Model 4049 control enclosure is 57" H x 57" W x 20" D.)
- To minimize water entrainment, an inlet hood with moisture limiter or inlet plenum is recommended.
- Outdoor air duct size varies. Consult Rapid Engineering LLC.
- Control enclosure can be located on left or right side of unit. (Shown on right side in drawings)

Model	Approximate Shipping Weights	
	Upright Fan Section	Upright Burner Section
4024	1,589	
4036	2,627	
4040	3,033	
4044	3,470	
4049	3,870	
4054	2,943	2,144
4060	3,323	2,489
4066	3,879	2,278
4073	5,293	3,051
4080	4,872	5,774
4089	5,373	5,833

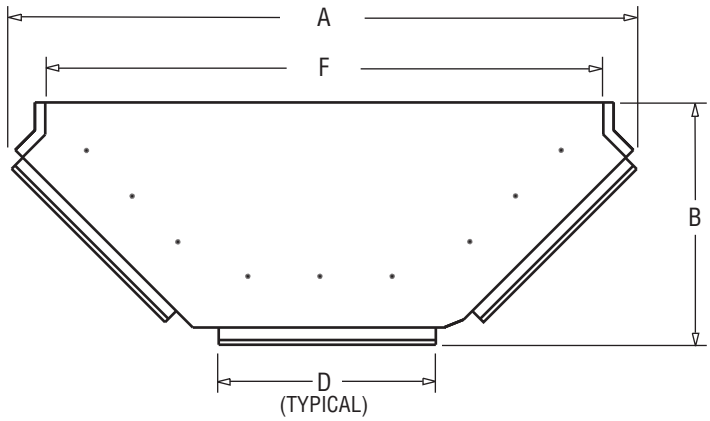
One-Way Discharge Head



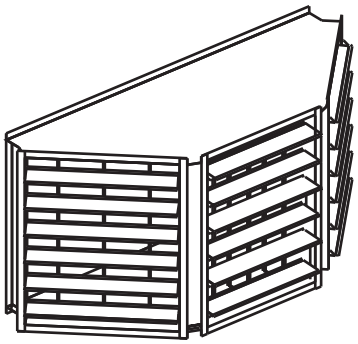
IMPORTANT NOTES:

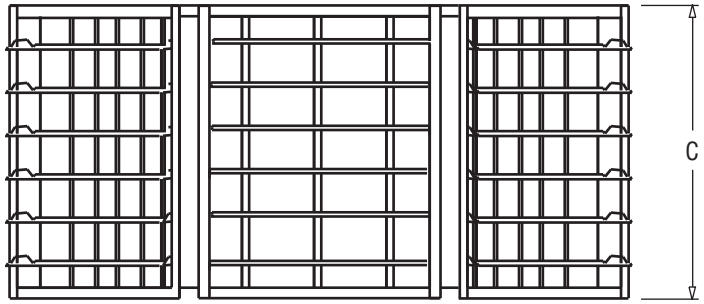
- All dimensions are in inches.
- All weights are in pounds.
- All dimensions and weights are subject to change without notice.
- The discharge head has manually adjustable horizontal blades (vertical blades are optional).
- Discharge head requires field support and mounting by installer.

Model	A	C	D	E	F	G	Discharge Inside Dimensions	Weight
4024	40	24.25	33.25	2	40	3.5	20 x 29	75
4036	58	29.25	51.25	3	58	3.5	25 x 47	105
4040	63	37.25	54.25	4	63	4.5	33 x 50	140
4044	69	40.25	60.25	4	69	4.5	36 x 56	180
4049	76	43.25	67.25	4	76	4.5	39 x 63	190
4054	85	47.25	76.25	4	85	4.5	43 x 72	210
4060	94	52.25	85.25	4	94	4.5	48 x 81	250
4066	104	54.25	95.25	4	96	4.5	50 x 91	290
4073	112	54.25	103.25	4	96	4.5	50 x 99	380
4080	131	64.25	120.25	4	112	5.5	60 x 116	480
4089	131	64.25	120.25	4	112	5.5	60 x 116	480

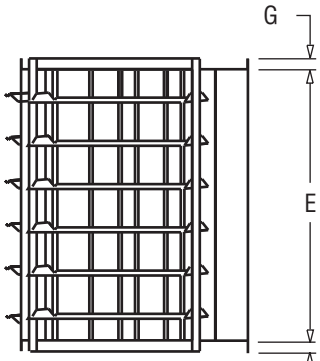


PLAN VIEW





FRONT VIEW



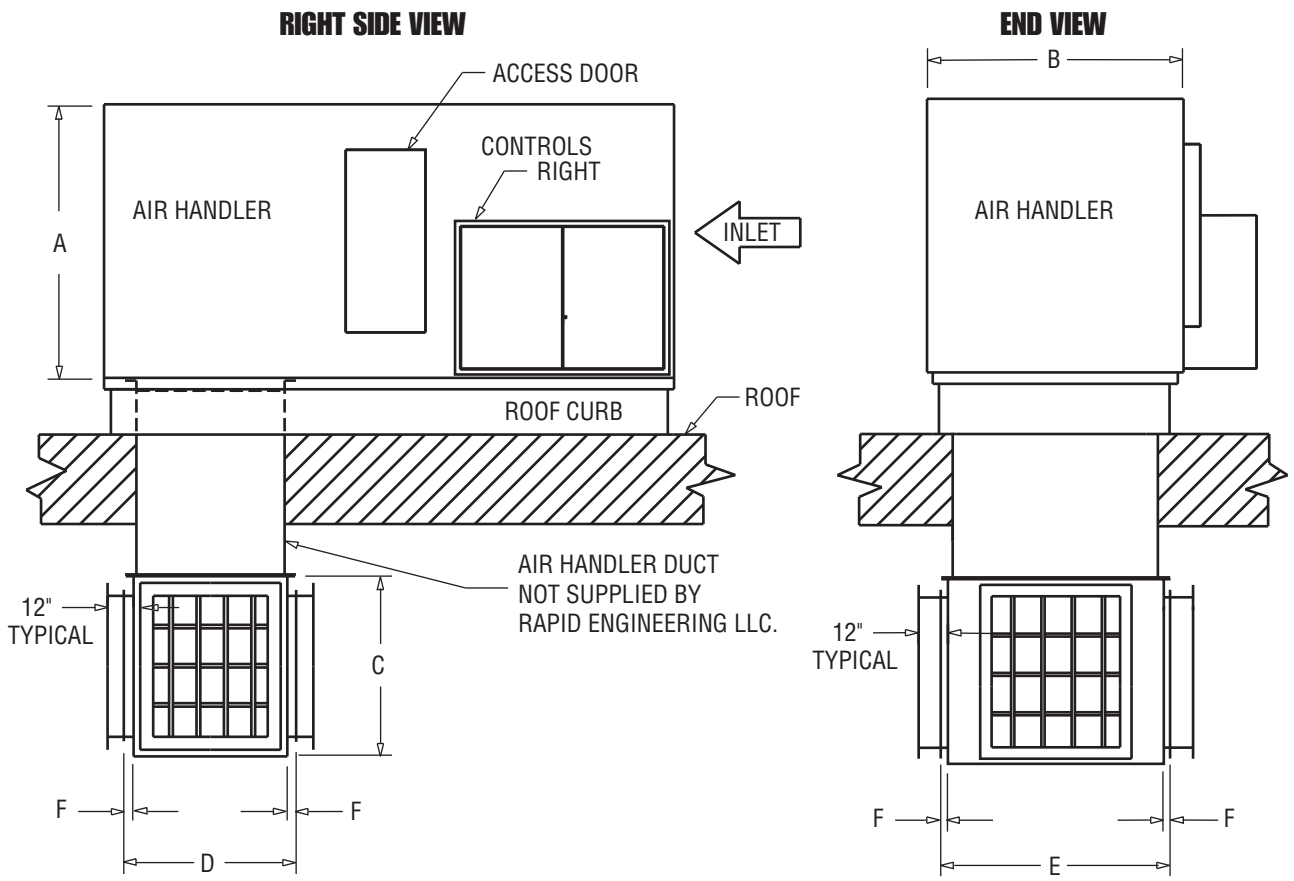
SIDE VIEW

IMPORTANT NOTES:

- All dimensions are in inches.
- All weights are in pounds.
- All dimensions and weights are subject to change without notice.
- The discharge head has manually adjustable horizontal blades (vertical blades are optional).
- Discharge head requires field support and mounting by installer.

Model	A	B	C	D	E	F	G	Weight
4024	44	25	24.4	14	20.3	29.3	2.1	73
4036	62	30	29.4	22	25.3	47.3	2.1	110
4040	65	31	37.4	23	33.3	50.3	2.1	128
4044	71	32	40.4	26	36.3	56.3	2.1	167
4049	78	34	43.4	28	39.3	63.3	2.1	208
4054	82	37	47.4	32	43.3	72.3	2.1	242
4060	96	40	52.4	36	48.3	81.3	2.1	272
4066	106	43	54.4	40	50.3	91.3	2.1	300
4073	114	45	54.4	40	50. 3	99.3	2.1	324
4080	131	48	60.4	50	60.3	116.3	2.1	465
4089	131	48	60.4	50	60.3	116.3	2.1	465

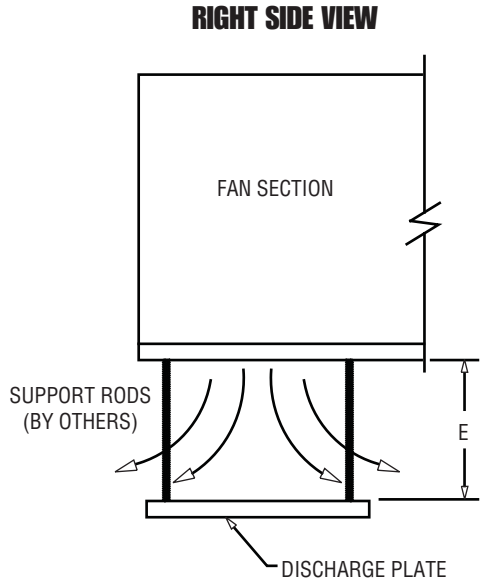
Four-Way Discharge Head

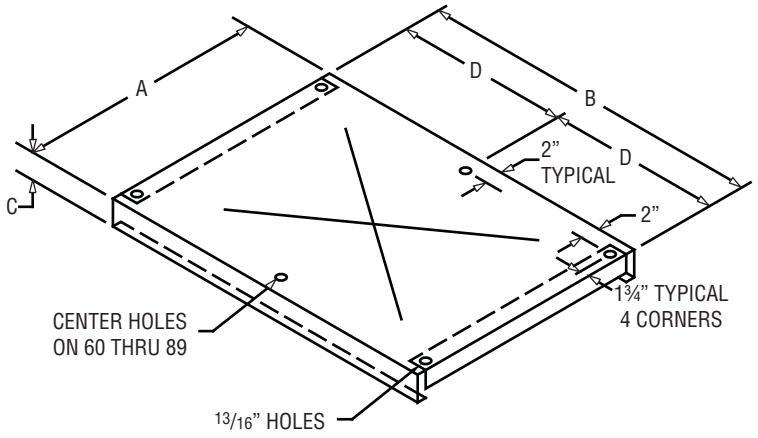


IMPORTANT NOTES:

- All dimensions are in inches.
- All weights are in pounds.
- All dimensions and weights are subject to change without notice.
- The discharge head has manually adjustable horizontal blades (vertical blades are optional).
- Discharge head requires field support and mounting by installer.

Model	A	B	C	D	E	F	Discharge Inside Dimensions	Weight
4024	40	40	46	24.3	33.3	2	20.3 x 29.3	220
4036	58	58	46	29.3	51.3	2	25.3 x 47.3	320
4040	63	63	46	37.3	54.3	2	33.3 x 50.3	380
4044	69	69	46	40.3	60.3	2	36.3 x 56.3	410
4049	76	76	46	43.3	67.3	2	39.3 x 63.3	440
4054	85	85	58	47.3	76.3	2	43.3 x 72.3	620
4060	94	94	58	52.3	85.3	2	48.3 x 81.3	670
4066	96	104	58	54.3	95.3	2	50.3 x 91.3	680
4073	96	112	58	54.3	103.3	2	50.3 x 99.3	780
4080	112	131	58	64.3	120.3	2	60.3 x 116.3	1,090
4089	112	131	58	64.3	120.3	2	60.3 x 116.3	1,090





IMPORTANT NOTES:

- All dimensions are in inches.
- All weights are in pounds.
- All dimensions and weights are subject to change without notice.
- Discharge head requires field support and mounting by installer.

Model	A	B	C	D	E (min.)	E (max.)	Weight
4024	42	54	3	-	25	38	80
4036	47	72	3	-	36	54	110
4040	55	75	3	-	42	64	130
4044	58	81	3	-	46	70	140
4049	61	88	3	-	50	75	160
4054	65	97	3	-	56	84	180
4060	70	106	3	53	64	96	230
4066	72	116	3	58	70	105	250
4073	72	124	3	62	75	112	260
4080	82	140	4	70	88	132	330
4089	82	140	4	70	88	132	330

Thank You for Your Business!

Installation Code and Annual Inspections:
All installation and service of RAPID™ equipment must be performed by a contractor qualified in the installation and service of equipment sold and supplied by Rapid Engineering LLC and conform to all requirements set forth in the Rapid Engineering LLC manuals and all applicable governmental authorities pertaining to the installation, service and operation of the equipment. To help facilitate optimum performance and safety, Rapid Engineering LLC recommends that a qualified contractor conduct, at a minimum, annual inspections of your RAPID™ equipment and perform service where necessary, using only replacement parts sold and supplied by Rapid Engineering LLC.

Further Information: Applications, engineering and detailed guidance on systems design, installation and equipment performance is available through RAPID™ representatives. Please contact us for any further information you may require, including the Installation, Operation and Service Manual.

This product is not for residential use.

This document is intended to assist licensed professionals in the exercise of their professional judgment.

Rapid Engineering LLC
1100 Seven Mile Road NW
Comstock Park, MI 49321
Telephone: +1 616.784.0500
Toll Free: 800.536.3461
Fax: +1 616.784.1910
www.rapidengineering.com

Printed in U.S.A. RP4DSGNA 1M 0711 Rev B