

**TABLE 4 FUEL PIPE SIZING**

**Natural Gas (Table values are maximum pipe run in feet.)**

kW	Pipe Size (in)						
	0.75"	1"	1.25"	1.5"	2"	2.5"	3"
7-8	55	200	820				
10	20	85	370	800			
13-14	10	50	245	545			
16-17		40	190	425			
20		20	130	305	945		
22		15	115	260	799		
25		10	95	220	739		
27			85	203	552		
30			60	147	565		
35-36			35	95	370	915	
40			25	75	315	790	
45			15	60	260	650	
48				50	230	585	
50				50	220	560	
60				25	145	390	1185
70				5	75	225	710
80					65	195	630
100					40	140	460
130						50	215
150						30	150

**LP Vapor (LPV) (Table values are maximum pipe run in feet.)**

kW	Pipe Size (in)						
	0.75"	1"	1.25"	1.5"	2"	2.5"	3"
7-8	165	570					
10	70	255	1000				
13-14	45	170	690				
16-17	25	130	540				
20	15	115	480				
22		85	365				
25		60	275	605			
27		55	260	575			
30		40	195	435			
35-36		20	125	290	1030		
40		15	107	250	890		
45			82	195	725		
48			70	165	620		
50			70	160	610		
60			45	115	445	1095	
70			20	60	260	660	
80			15	50	230	590	
100				30	165	430	1305
130					70	205	660
150					45	150	490

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**LP**

LPG: 8.55 ft<sup>3</sup>/lb., 4.24 lbs./gal., 2500 btu/ft<sup>3</sup>  
 LPG: 36.3 ft<sup>3</sup> = 1 gal.

**Natural Gas**

1 cubic foot = 1,000 BTU  
 1 therm = 100,000 BTU  
 Gas consumption = 13,000-16,000 BTU per kW/hr

**Pressure**

1 inch mercury = 13.61 inches water column  
 1 inch Water Column = 0.036 psi  
 5-14 inches water column = 0.18 psi to 0.50 psi

**Note:**

- Pipe sizing is based on 0.5" H<sub>2</sub>O pressure drop.
- Sizing includes a nominal number of elbows and tees.
- Please verify adequate service and meter sizing.

**TABLE 5 LP VAPOR (LPV) TANK SIZING**

**Vapor Withdrawal**

Tank Capacity Total (Gal.)	Tank Capacity Useable (Gal.)	Minimum Temp (°F)	Tank Capacity (btu/hr.)	Length (Inches)	Diameter (Inches)	Overall Ht. (Inches)
120	72	40	246,240	57	24	33
		20	164,160			
		0	82,080			
150	90	40	293,760	68	24	33
		20	195,840			
		0	97,920			
250	150	40	507,600	94	30	39
		20	338,400			
		0	169,200			
325	195	40	642,600	119	30	39
		20	428,400			
		0	214,200			
500	300	40	792,540	119	37	46
		20	528,360			
		0	264,180			
850	510	40	1,217,700	165	41	50
		20	811,800			
		0	405,900			
1000	600	40	1,416,960	192	41	50
		20	944,640			
		0	472,320			

Load (kW)	BTU / Hr	LP Gal / Hr	NG Ft <sup>3</sup> / Hr	NG Therms/ HR
5	110,000	1.2	110	1.1
10	176,400	2	156	1.6
15	231,800	2.5	220	2.2
20	294,000	2.9	294	2.6
25	352,800	3.8	316	3.2
30	418,300	4.5	417	4.2
35	467,400	5.1	485	4.8
40	550,000	6.1	550	5.5
50	675,000	7.5	675	6.7
60	836,600	9	862	8.6
70	1,035,700	11	1,020	10.2
80	1,170,000	12.7	1,154	11.5
90	1,200,000	13	1,200	12
100	1,280,000	13.8	1,260	12.6
110	1,550,000	17.1	1,550	15.5
120	1,675,000	18.5	1,675	16.7
130	1,800,000	19.5	1,786	17.8
140	1,925,000	21.3	1,925	19.2
150	2,050,000	22.7	2,050	20.5
200	2,800,000	30.9	2,800	28.0
300	4,100,000	45.3	4,100	49.0

Gas Required For Common Appliances	
Appliance	Approximate Input BTU / Hr
Warm Air Furnace Single Family Multifamily, per unit	100,000 60,000
Hydronic Boiler, Space Heating Single Family Multifamily, per unit	100,000 60,000
Hydronic Boiler, Space and Water Heating Single Family Multifamily, per unit	120,000 75,000
Range, Free Standing, Domestic Built-In Oven or Broiler Unit, Domestic Built-In Top Unit, Domestic	65,000 25,000 40,000
Water Heater, Automatic Storage, 30 to 40 gal. Tank Water Heater, Automatic Storage, 50 gal. Tank Water Heater, Automatic Storage, Instantaneous 2 GPM 4 GPM 6 GPM Water Heater, Domestic, Circulating or Side-Arm	35,000 50,000 142,800 285,000 428,000 35,000
Refrigerator Clothes Dryer, Type 1 (Domestic) Gas Fireplace Direct Vent Gas log Barbecue Gas light Incinerator, Domestic	3,000 35,000 40,000 80,000 40,000 2,500 35,000

Table Reprinted From Table 5.4.2.1, NFPA 54, 2002 ed.

<b>Operating Cost Per Hour</b>
=
NG Therms/HR x Cost of NG Therm

Note: Tank BTU capacity and generator run times based upon maintaining a minimum tank fuel level of 20%. Tanks are typically filled to 80% full.

Note: Typical fuel consumption based on a generator 100% loaded.