

Residential System Sizing Calculation

Summary

Parnell Res

Project Title:
260427 Parnell Res

Lake City, FL

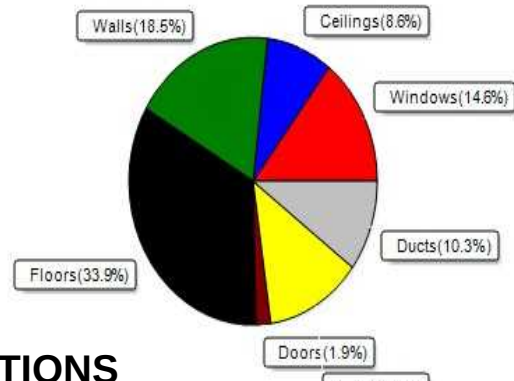
5/28/2026

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(100 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(51gr.)			
Winter design temperature(TMY3 99%)	30 F	Summer design temperature(TMY3 99%)	94 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	40 F	Summer temperature difference	19 F
Total heating load calculation	44278 Btuh	Total cooling load calculation	38622 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	108.4 48000	Sensible (SHR = 0.75)	110.3 36000
Heat Pump + Auxiliary(0.0kW)	108.4 48000	Latent	200.6 12000
		Total (Electric Heat Pump)	124.3 48000

WINTER CALCULATIONS

Winter Heating Load (for 3009 sqft)

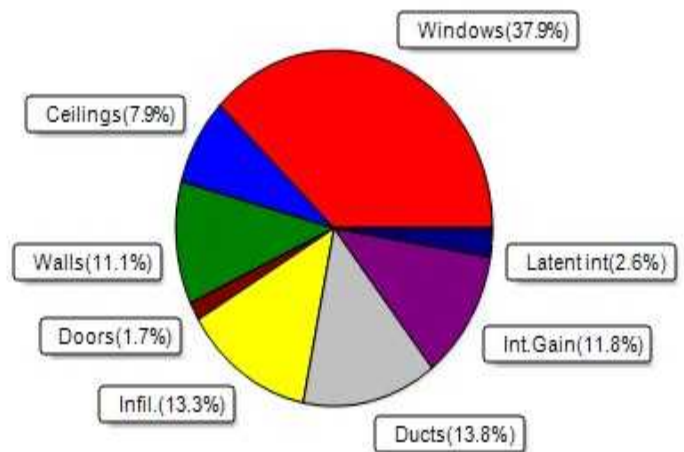
Load component	Load
Window total 538 sqft	6454 Btuh
Wall total 2596 sqft	8182 Btuh
Door total 53 sqft	853 Btuh
Ceiling total 3171 sqft	3821 Btuh
Floor total See detail report	15010 Btuh
Infiltration 124 cfm	5419 Btuh
Duct loss	4539 Btuh
Subtotal	44278 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	44278 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 3009 sqft)

Load component	Load
Window total 538 sqft	14624 Btuh
Wall total 2596 sqft	4304 Btuh
Door total 53 sqft	640 Btuh
Ceiling total 3171 sqft	3057 Btuh
Floor total	0 Btuh
Infiltration 93 cfm	1931 Btuh
Internal gain	4550 Btuh
Duct gain	3535 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	32640 Btuh
Latent gain(ducts)	1778 Btuh
Latent gain(infiltration)	3204 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1000 Btuh
Total latent gain	5982 Btuh
TOTAL HEAT GAIN	38622 Btuh



8th Edition

EnergyGauge® System Sizing
PREPARED BY: **Evan Beamsley**
DATE: **2026-05-28**

System Sizing Calculations - Winter

Residential Load - Room by Room Component Details

Parnell Res
Lake City, FL

Project Title:
260427 Parnell Res
Building Type: User

5/28/2026

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 °F (TMY3 99%)
Winter Setpoint: 70 °F (Required Manual J default)

This calculation is for Worst Case. The house has been rotated 270 degrees.

Component Loads for Room #1: Main								
Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.27	Vinyl	0.30	W	32.0		12.0	384 Btuh
2	2, NFRC 0.27	Vinyl	0.30	W	24.0		12.0	288 Btuh
3	2, NFRC 0.27	Vinyl	0.30	W	192.0		12.0	2304 Btuh
4	2, NFRC 0.27	Vinyl	0.30	W	36.0		12.0	432 Btuh
5	2, NFRC 0.27	Vinyl	0.30	N	32.0		12.0	384 Btuh
6	2, NFRC 0.27	Vinyl	0.30	N	12.0		12.0	144 Btuh
7	2, NFRC 0.27	Vinyl	0.30	E	36.0		12.0	432 Btuh
8	2, NFRC 0.27	Vinyl	0.30	E	32.0		12.0	384 Btuh
9	2, NFRC 0.27	Vinyl	0.30	E	12.0		12.0	144 Btuh
10	2, NFRC 0.27	Vinyl	0.30	E	36.0		12.0	432 Btuh
11	2, NFRC 0.27	Vinyl	0.30	E	16.0		12.0	192 Btuh
12	2, NFRC 0.27	Vinyl	0.30	E	16.0		12.0	192 Btuh
14	2, NFRC 0.27	Vinyl	0.30	S	12.5		12.0	150 Btuh
15	2, NFRC 0.27	Vinyl	0.30	S	9.3		12.0	112 Btuh
16	2, NFRC 0.27	Vinyl	0.30	S	10.0		12.0	120 Btuh
Window Total					507.8(sqft)			6094 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	109		3.09	337 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	162		3.09	500 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	103		3.09	318 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	162		3.09	500 Btuh
5	Frame - Wood	- Ext	(0.077)	19.0/0.0	101		3.09	311 Btuh
6	Frame - Wood	- Ext	(0.077)	19.0/0.0	566		3.09	1749 Btuh
7	Frame - Wood	- Ext	(0.077)	19.0/0.0	127		3.09	394 Btuh
8	Frame - Wood	- Ext	(0.077)	19.0/0.0	83		3.09	258 Btuh
9	Frame - Wood	- Ext	(0.077)	19.0/0.0	60		3.09	185 Btuh
10	Frame - Wood	- Ext	(0.077)	19.0/0.0	94		3.09	291 Btuh
11	Frame - Wood	- Ext	(0.077)	19.0/0.0	52		3.09	160 Btuh
12	Frame - Wood	- Ext	(0.077)	19.0/0.0	81		3.09	249 Btuh
13	Frame - Wood	- Ext	(0.077)	19.0/0.0	40		3.09	124 Btuh
14	Frame - Wood	- Ext	(0.077)	19.0/0.0	91		3.09	280 Btuh
15	Frame - Wood	- Adj	(0.089)	13.0/0.0	108		3.55	382 Btuh
19	Frame - Wood	- Ext	(0.077)	19.0/0.0	285		3.09	880 Btuh
Wall Total					2222(sqft)			6918 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.400)		8		16.0	128 Btuh
2	Insulated - Garage, n		(0.400)		24		16.0	384 Btuh
Door Total					32(sqft)			512Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Parnell Res
Lake City, FL

Project Title:
260427 Parnell Res
Building Type: User

5/28/2026

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Flat ceil/D/Shing	(0.241)	0.0/22.0	2862	1.2	3449 Btuh
3	Knee wall/D/Shing	(0.241)	0.0/22.0	162	1.2	195 Btuh
	Ceiling Total			3024(sqft)		3644Btuh
Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	275.0 ft(perim.)	47.2	12980 Btuh
	Floor Total			2862 sqft		12980 Btuh
	Room Envelope Subtotal:					30148 Btuh
Infiltration	Type	Wholehouse ACH	Room Volume	Wall Ratio	CFM=	Load
	Natural	0.24	29192	0.86	105.8	4639 Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DLM of 0.114)					3974 Btuh
Room #1	Sensible Room Subtotal					38761 Btuh

Component Loads for Room #2: gym

Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
13	2, NFRC 0.27	Vinyl	0.30	W	30.0		12.0	360 Btuh
	Window Total				30.0(sqft)			360 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
16	Frame - Wood	- Adj	(0.089)	13.0/0.0	168		3.55	595 Btuh
17	Frame - Wood	- Adj	(0.089)	13.0/0.0	69		3.55	244 Btuh
18	Frame - Wood	- Ext	(0.077)	19.0/0.0	138		3.09	425 Btuh
	Wall Total				374(sqft)			1263 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
3	Insulated - Garage, n		(0.400)		21		16.0	341 Btuh
	Door Total				21(sqft)			341Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
2	Flat ceil/D/Shing		(0.241)	0.0/22.0	147		1.2	177 Btuh
	Ceiling Total				147(sqft)			177Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
2	Slab On Grade		(1.180)	0.0	43.0 ft(perim.)		47.2	2030 Btuh
	Floor Total				147 sqft			2030 Btuh
	Room Envelope Subtotal:							4172 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Parnell Res
Lake City, FL

Project Title:
260427 Parnell Res
Building Type: User

5/28/2026

Infiltration	Type Natural	Wholehouse ACH 0.24	Room Volume 1470	Wall Ratio 0.14	CFM= 17.8	780 Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DLM of 0.114)					566 Btuh
Room #2	Sensible Room Subtotal					5517 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	44278 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	44278 Btuh

EQUIPMENT

1. Electric Heat Pump	#	48000 Btuh
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Key: Window types - NFRC (Requires U-Factor and Shading coefficient(SHGC) of glass as numerical values)
or - Glass as 'Clear' or 'Tint' (Uses U-Factor and SHGC defaults)
U - (Window U-Factor)
HTM - (ManualJ Heat Transfer Multiplier)



Version 8

System Sizing Calculations - Summer

Residential Load - Room by Room Component Details

Parnell Res

Project Title:
260427 Parnell Res

Lake City, FL

5/28/2026

Reference City: Gainesville, FL (Defaults)

Temperature Difference: 19.0F(TMY3 99%)

Humidity difference: 51gr.

Summer Setpoint: 75 °F (Required Manual J default)

This calculation is for Worst Case. The house has been rotated 270 degrees.

Component Loads for Room #1: Main

Window	Type*						Overhang		Window Area(sqft)			HTM		Load		
	Panes	SHGC	U	InSh	IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded			
1	2 NFRC	0.27, 0.30	No	No	W		1.3ft	1.0ft	32.0	0.6	31.4	11	32	1004	Btuh	
2	2 NFRC	0.27, 0.30	No	No	W		1.3ft	1.0ft	24.0	0.4	23.6	11	32	753	Btuh	
3	2 NFRC	0.27, 0.30	No	No	W		13.3f	0.0ft	192.0	192.0	0.0	11	32	2185	Btuh	
4	2 NFRC	0.27, 0.30	No	No	W		1.3ft	1.0ft	36.0	0.6	35.4	11	32	1129	Btuh	
5	2 NFRC	0.27, 0.30	No	No	N		1.3ft	1.0ft	32.0	0.0	32.0	11	11	364	Btuh	
6	2 NFRC	0.27, 0.30	No	No	N		1.3ft	1.0ft	12.0	0.0	12.0	11	11	137	Btuh	
7	2 NFRC	0.27, 0.30	No	No	E		1.3ft	1.0ft	36.0	0.6	35.4	11	32	1129	Btuh	
8	2 NFRC	0.27, 0.30	No	No	E		10.0f	2.5ft	32.0	23.2	8.8	11	32	543	Btuh	
9	2 NFRC	0.27, 0.30	No	No	E		10.0f	0.5ft	12.0	12.0	0.0	11	32	137	Btuh	
10	2 NFRC	0.27, 0.30	No	No	E		1.3ft	1.0ft	36.0	0.6	35.4	11	32	1129	Btuh	
11	2 NFRC	0.27, 0.30	No	No	E		1.3ft	1.5ft	16.0	0.0	16.0	11	32	508	Btuh	
12	2 NFRC	0.27, 0.30	No	No	E		1.3ft	1.5ft	16.0	0.0	16.0	11	32	508	Btuh	
14	2 NFRC	0.27, 0.30	No	No	S		1.3ft	1.0ft	12.5	12.5	0.0	11	13	142	Btuh	
15	2 NFRC	0.27, 0.30	No	No	S		1.3ft	1.0ft	9.3	9.3	0.0	11	13	106	Btuh	
16	2 NFRC	0.27, 0.30	No	No	S		1.3ft	1.5ft	10.0	10.0	0.0	11	13	114	Btuh	
	Window Total									508 (sqft)					9887	Btuh
Walls	Type						U-Value	R-Value	Area(sqft)		HTM		Load			
							Cav/Sheath									
1	Frame - Wood - Ext						0.08	19.0/0.0	109.0		1.7		180		Btuh	
2	Frame - Wood - Ext						0.08	19.0/0.0	161.7		1.7		267		Btuh	
3	Frame - Wood - Ext						0.08	19.0/0.0	103.0		1.7		170		Btuh	
4	Frame - Wood - Ext						0.08	19.0/0.0	161.7		1.7		267		Btuh	
5	Frame - Wood - Ext						0.08	19.0/0.0	100.7		1.7		166		Btuh	
6	Frame - Wood - Ext						0.08	19.0/0.0	566.0		1.7		936		Btuh	
7	Frame - Wood - Ext						0.08	19.0/0.0	127.3		1.7		211		Btuh	
8	Frame - Wood - Ext						0.08	19.0/0.0	83.3		1.7		138		Btuh	
9	Frame - Wood - Ext						0.08	19.0/0.0	60.0		1.7		99		Btuh	
10	Frame - Wood - Ext						0.08	19.0/0.0	94.0		1.7		155		Btuh	
11	Frame - Wood - Ext						0.08	19.0/0.0	51.7		1.7		85		Btuh	
12	Frame - Wood - Ext						0.08	19.0/0.0	80.7		1.7		133		Btuh	
13	Frame - Wood - Ext						0.08	19.0/0.0	40.0		1.7		66		Btuh	
14	Frame - Wood - Ext						0.08	19.0/0.0	90.7		1.7		150		Btuh	
15	Frame - Wood - Adj						0.09	13.0/0.0	107.7		1.7		182		Btuh	
19	Frame - Wood - Ext						0.08	19.0/0.0	284.8		1.7		471		Btuh	
	Wall Total									2222 (sqft)					3678	Btuh
Doors	Type								Area (sqft)		HTM		Load			
1	Insulated - Exterior								8.0		12.0		96		Btuh	
2	Insulated - Garage								24.0		12.0		288		Btuh	
	Door Total									32 (sqft)					384	Btuh
Ceilings	Type/Color/Surface						U-Value	R-Value	Area(sqft)		HTM		Load			
1	Unvented Attic/DarkShingle						0.241	0.0/22.0	2862.0		0.96		2759		Btuh	
3	Knee wall to attic/DarkShingle						0.241	0.0/22.0	162.0		0.96		156		Btuh	
	Ceiling Total									3024 (sqft)					2915	Btuh
Floors	Type						R-Value		Size		HTM		Load			
1	Slab On Grade						0.0		2862 (ft-perimeter)		0.0		0		Btuh	
	Floor Total									2862.0 (sqft)					0	Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Parnell Res

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
260427 Parnell Res

Lake City, FL

5/28/2026

	Zone Envelope Subtotal:					16865 Btuh
Infiltration	Type Natural	Wholehouse ACH 0.18	Volume(cuft) 29192	Wall Ratio 0.86	CFM= 79.3	Load 1653 Btuh
Internal gain		Occupants 5	Btuh/occupant X 230	Appliance +	3400	Load 4550 Btuh
	Sensible Envelope Load:					23067 Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.121)					2802 Btuh
	Sensible Zone Load					25869 Btuh

Component Loads for Room #2: gym

Window	Type*						Overhang		Window Area(sqft)			HTM		Load			
	Panes	SHGC	U	InSh	IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded				
13	2 NFRC	0.27, 0.30	No	No	No	W	1.3ft	1.5ft	30.0	0.0	30.0	11	32	952 Btuh			
	Window Total								30 (sqft)					952 Btuh			
Walls	Type	U-Value						R-Value		Area(sqft)			HTM		Load		
								Cav/Sheath									
16	Frame - Wood - Adj						0.09		13.0/0.0		167.5			1.7		282 Btuh	
17	Frame - Wood - Adj						0.09		13.0/0.0		68.7			1.7		116 Btuh	
18	Frame - Wood - Ext						0.08		19.0/0.0		137.5			1.7		227 Btuh	
	Wall Total										374 (sqft)					626 Btuh	
Doors	Type									Area (sqft)			HTM		Load		
3	Insulated - Garage										21.3			12.0		256 Btuh	
	Door Total										21 (sqft)					256 Btuh	
Ceilings	Type/Color/Surface	U-Value						R-Value		Area(sqft)			HTM		Load		
2	Unvented Attic/DarkShingle						0.241		0.0/22.0		147.0			0.96		142 Btuh	
	Ceiling Total										147 (sqft)					142 Btuh	
Floors	Type							R-Value		Size			HTM		Load		
2	Slab On Grade								0.0		147 (ft-perimeter)			0.0		0 Btuh	
	Floor Total										147.0 (sqft)					0 Btuh	
	Zone Envelope Subtotal:													1975 Btuh			
Infiltration	Type	Wholehouse ACH						Volume(cuft)		Wall Ratio			CFM=		Load		
	Natural	0.18						1470		0.14			13.3		278 Btuh		
Internal gain		Occupants						Btuh/occupant		Appliance			Load				
		0						X 230		+			0		0 Btuh		
	Sensible Envelope Load:													2253 Btuh			

Manual J Summer Calculations

Residential Load - Component Details (continued)

Parnell Res
Lake City, FL

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
260427 Parnell Res

5/28/2026

Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.121)	274 Btuh
	Sensible Zone Load	2527 Btuh

The following window Excursion will be assigned to the system loads.

Windows	July excursion for System 1	3784 Btuh
	Excursion Subtotal:	3784 Btuh
Duct load		460 Btuh
	Sensible Excursion Load	4244 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Parnell Res
Lake City, FL

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
260427 Parnell Res

5/28/2026

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	29105 Btuh
	Sensible Duct Load	3535 Btuh
	Total Sensible Zone Loads	32640 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	32640 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	3204 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1778 Btuh
	Latent occupant gain (5.0 people @ 200 Btuh per person)	1000 Btuh
	Latent other gain	0 Btuh
	Latent total gain	5982 Btuh
	TOTAL GAIN	38622 Btuh

EQUIPMENT

1. Central Unit	#	48000 Btuh
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*Key: Window types (Panels - Number and type of panes of glass)
(SHGC - Shading coefficient of glass as SHGC numerical value)
(U - Window U-Factor)
(InSh - Interior shading device: none(No), Blinds(B), Draperies(D) or Roller Shades(R))
- For Blinds: Assume medium color, half closed
For Draperies: Assume medium weave, half closed
For Roller shades: Assume translucent, half closed
(IS - Insect screen: none(N), Full(F) or Half(½))
(Ornt - compass orientation)



Version 8