

# Residential System Sizing Calculation

## Summary

Project Title:  
Pittman Residence

, FL

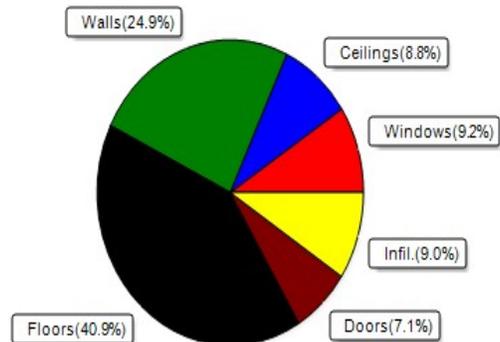
11/19/2025

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
<b>Total heating load calculation</b>	<b>28591</b>	<b>Btuh</b>	<b>Total cooling load calculation</b>	<b>22228</b>	<b>Btuh</b>
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	146.9	42000	Sensible (SHR = 0.75)	164.9	31500
Heat Pump + Auxiliary(0.0kW)	146.9	42000	Latent	336.3	10500
			<b>Total (Electric Heat Pump)</b>	<b>188.9</b>	<b>42000</b>

## WINTER CALCULATIONS

Winter Heating Load (for 1985 sqft)

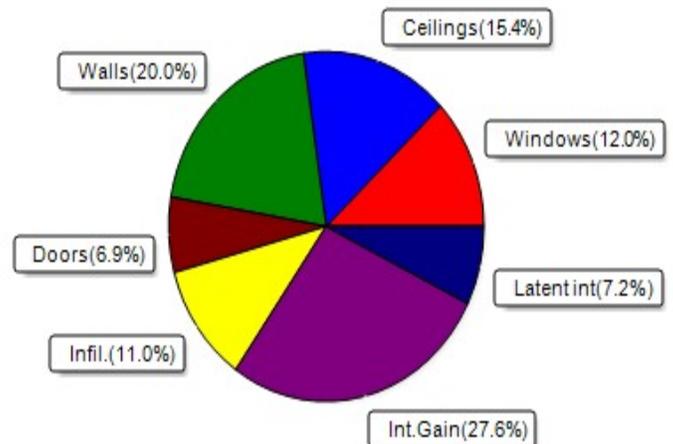
Load component	Load	
Window total	252 sqft	2621 Btuh
Wall total	2007 sqft	7124 Btuh
Door total	111 sqft	2036 Btuh
Ceiling total	1985 sqft	2529 Btuh
Floor total	1985 sqft	11706 Btuh
Infiltration	59 cfm	2575 Btuh
Duct loss		0 Btuh
<b>Subtotal</b>		<b>28591 Btuh</b>
Ventilation	Ex:0 cfm; Sup:0 cfm	0 Btuh
<b>TOTAL HEAT LOSS</b>		<b>28591 Btuh</b>



## SUMMER CALCULATIONS

Summer Cooling Load (for 1985 sqft)

Load component	Load	
Window total	252 sqft	2667 Btuh
Wall total	2007 sqft	4441 Btuh
Door total	111 sqft	1527 Btuh
Ceiling total	1985 sqft	3414 Btuh
Floor total		0 Btuh
Infiltration	44 cfm	917 Btuh
Internal gain		6140 Btuh
Duct gain		0 Btuh
Sens.Ventilation	Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load		0 Btuh
<b>Total sensible gain</b>		<b>19106 Btuh</b>
Latent gain(ducts)		0 Btuh
Latent gain(infiltration)		1522 Btuh
Latent gain(ventilation)		0 Btuh
Latent gain(internal/occupants/other)		1600 Btuh
<b>Total latent gain</b>		<b>3122 Btuh</b>
<b>TOTAL HEAT GAIN</b>		<b>22228 Btuh</b>



8th Edition

EnergyGauge® System Sizing

PREPARED BY: \_\_\_\_\_

DATE: 11-19-25

# System Sizing Calculations - Summer

## Residential Load - Whole House Component Details

Project Title:  
Pittman Residence

, FL

11/19/2025

Reference City: Gainesville, FL (Defaults)  
Humidity difference: 51gr.

Temperature Difference: 19.0F(TMY3 99%)  
Summer Setpoint: 75 °F (Required Manual J default)

### Component Loads for Whole House

Window	Type*					Overhang		Window Area(sqft)			HTM		Load		
	Panes	SHGC	U	InSh	IS Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded			
1	2 NFRC	0.20, 0.26	No	No	N	1.5ft	1.3ft	36.0	0.0	36.0	9	9	329	Btuh	
2	2 NFRC	0.20, 0.26	No	No	N	1.5ft	1.3ft	36.0	0.0	36.0	9	9	329	Btuh	
3	2 NFRC	0.20, 0.26	No	No	N	1.5ft	1.3ft	54.0	0.0	54.0	9	9	494	Btuh	
4	2 NFRC	0.20, 0.26	No	No	E	1.5ft	1.3ft	6.0	0.0	6.0	9	24	145	Btuh	
5	2 NFRC	0.20, 0.26	No	No	E	1.5ft	1.3ft	18.0	0.0	18.0	9	24	436	Btuh	
6	2 NFRC	0.20, 0.26	No	No	S	1.5ft	1.3ft	18.0	18.0	0.0	9	11	165	Btuh	
7	2 NFRC	0.20, 0.26	No	No	S	1.5ft	1.3ft	18.0	18.0	0.0	9	11	165	Btuh	
8	2 NFRC	0.20, 0.26	No	No	S	1.5ft	1.3ft	36.0	36.0	0.0	9	11	329	Btuh	
9	2 NFRC	0.20, 0.26	No	No	S	1.5ft	1.3ft	12.0	12.0	0.0	9	11	110	Btuh	
10	2 NFRC	0.20, 0.26	No	No	S	1.5ft	1.3ft	18.0	18.0	0.0	9	11	165	Btuh	
Window Total								252 (sqft)				2667 Btuh			
Walls	Type	U-Value	R-Value	Area(sqft)		HTM		Load							
						Cav/Sheath									
1	Frame - Wood - Ext	0.09	13.0/0.0	214.0		2.3		484 Btuh							
2	Frame - Wood - Ext	0.09	13.0/0.0	50.0		2.3		113 Btuh							
3	Frame - Wood - Ext	0.09	13.0/0.0	92.7		2.3		210 Btuh							
4	Frame - Wood - Ext	0.09	13.0/0.0	140.0		2.3		317 Btuh							
5	Frame - Wood - Ext	0.09	13.0/0.0	116.0		2.3		263 Btuh							
6	Frame - Wood - Ext	0.09	13.0/0.0	432.7		2.3		979 Btuh							
7	Frame - Wood - Ext	0.09	13.0/0.0	48.0		2.3		109 Btuh							
8	Frame - Wood - Ext	0.09	13.0/0.0	102.0		2.3		231 Btuh							
9	Frame - Wood - Ext	0.09	13.0/0.0	87.0		2.3		197 Btuh							
10	Frame - Wood - Ext	0.09	13.0/0.0	120.0		2.3		272 Btuh							
11	Frame - Wood - Ext	0.09	13.0/0.0	9.3		2.3		21 Btuh							
12	Frame - Wood - Ext	0.09	13.0/0.0	20.0		2.3		45 Btuh							
13	Frame - Wood - Ext	0.09	13.0/0.0	80.7		2.3		183 Btuh							
14	Frame - Wood - Ext	0.09	13.0/0.0	80.0		2.3		181 Btuh							
15	Frame - Wood - Ext	0.09	13.0/0.0	128.0		2.3		290 Btuh							
16	Frame - Wood - Ext	0.09	13.0/0.0	33.3		2.3		75 Btuh							
17	Frame - Wood - Ext	0.09	13.0/0.0	78.0		2.3		177 Btuh							
18	Frame - Wood - Adj	0.09	13.0/0.0	175.0		1.7		295 Btuh							
Wall Total				2007 (sqft)				4441 Btuh							
Doors	Type	Area (sqft)		HTM		Load									
1	Insulated - Exterior	48.0		13.8		662 Btuh									
2	Insulated - Exterior	42.7		13.8		589 Btuh									
3	Insulated - Garage	20.0		13.8		276 Btuh									
Door Total		111 (sqft)				1527 Btuh									
Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM		Load								
1	Vented Attic/DarkMetal	0.032	30.0/0.0	1985.0	1.72		3414 Btuh								
Ceiling Total				1985 (sqft)		3414 Btuh									
Floors	Type	R-Value		Size	HTM		Load								
1	Slab On Grade	0.0		1985 (ft-perimeter)	0.0		0 Btuh								
Floor Total				1985.0 (sqft)		0 Btuh									
Envelope Subtotal:							12049 Btuh								

# Manual J Summer Calculations

## Residential Load - Component Details (continued)

Project Title: Climate:FL\_GAINESVILLE\_REGIONAL\_A  
Pittman Residence

, FL

11/19/2025

<b>Infiltration</b>	Type Natural	Average ACH 0.15	Volume(cuft) 17865	Wall Ratio 1	CFM= 44.0	Load 917 Btuh
<b>Internal gain</b>		Occupants 8	Btuh/occupant X 230	+	Appliance 4300	Load 6140 Btuh
	Sensible Envelope Load:					19106 Btuh
<b>Duct load</b>	Average sealed, Supply(R6.0-Condi), Return(R6.0-Condi) (DGM of 0.000)					0 Btuh
	<b>Sensible Load All Zones</b>					<b>19106 Btuh</b>

# Manual J Summer Calculations

## Residential Load - Component Details (continued)

Project Title: Climate:FL\_GAINESVILLE\_REGIONAL\_A  
Pittman Residence

, FL

11/19/2025

### WHOLE HOUSE TOTALS

<b>Whole House Totals for Cooling</b>	<b>Sensible Envelope Load All Zones</b>	<b>19106 Btuh</b>
	Sensible Duct Load	0 Btuh
	<b>Total Sensible Zone Loads</b>	<b>19106 Btuh</b>
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	<b>Total sensible gain</b>	<b>19106 Btuh</b>
	Latent infiltration gain (for 51 gr. humidity difference)	1522 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	<b>Latent total gain</b>	<b>3122 Btuh</b>
	<b>TOTAL GAIN</b>	<b>22228 Btuh</b>

### EQUIPMENT

1. Central Unit	#	42000 Btuh
-----------------	---	------------

\*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

# System Sizing Calculations - Winter

## Residential Load - Whole House Component Details

Project Title:  
Pittman Residence  
Building Type: User

, FL

11/19/2025

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

### Component Loads for Whole House

Window	Panels/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.20	Vinyl	0.26	N	36.0		10.4	374 Btuh
2	2, NFRC 0.20	Vinyl	0.26	N	36.0		10.4	374 Btuh
3	2, NFRC 0.20	Vinyl	0.26	N	54.0		10.4	562 Btuh
4	2, NFRC 0.20	Vinyl	0.26	E	6.0		10.4	62 Btuh
5	2, NFRC 0.20	Vinyl	0.26	E	18.0		10.4	187 Btuh
6	2, NFRC 0.20	Vinyl	0.26	S	18.0		10.4	187 Btuh
7	2, NFRC 0.20	Vinyl	0.26	S	18.0		10.4	187 Btuh
8	2, NFRC 0.20	Vinyl	0.26	S	36.0		10.4	374 Btuh
9	2, NFRC 0.20	Vinyl	0.26	S	12.0		10.4	125 Btuh
10	2, NFRC 0.20	Vinyl	0.26	S	18.0		10.4	187 Btuh
Window Total					252.0(sqft)			2621 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	214		3.55	760 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	50		3.55	178 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	93		3.55	329 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	140		3.55	497 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	116		3.55	412 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	433		3.55	1536 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	48		3.55	170 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	102		3.55	362 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	87		3.55	309 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	120		3.55	426 Btuh
11	Frame - Wood	- Ext	(0.089)	13.0/0.0	9		3.55	33 Btuh
12	Frame - Wood	- Ext	(0.089)	13.0/0.0	20		3.55	71 Btuh
13	Frame - Wood	- Ext	(0.089)	13.0/0.0	81		3.55	286 Btuh
14	Frame - Wood	- Ext	(0.089)	13.0/0.0	80		3.55	284 Btuh
15	Frame - Wood	- Ext	(0.089)	13.0/0.0	128		3.55	454 Btuh
16	Frame - Wood	- Ext	(0.089)	13.0/0.0	33		3.55	118 Btuh
17	Frame - Wood	- Ext	(0.089)	13.0/0.0	78		3.55	277 Btuh
18	Frame - Wood	- Adj	(0.089)	13.0/0.0	175		3.55	621 Btuh
Wall Total					2007(sqft)			7124 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior,	n	(0.460)		48		18.4	883 Btuh
2	Insulated - Exterior,	n	(0.460)		43		18.4	785 Btuh
3	Insulated - Garage,	n	(0.460)		20		18.4	368 Btuh
Door Total					111(sqft)			2036Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Metal		(0.032)	30.0/0.0	1985		1.3	2529 Btuh
Ceiling Total					1985(sqft)			2529Btuh

# Manual J Winter Calculations

## Residential Load - Component Details (continued)

Project Title:  
Pittman Residence  
Building Type: User

, FL

11/19/2025

<b>Floors</b> 1	Type Slab On Grade Floor Total	Ueff. (1.180)	R-Value 0.0	Size X 248.0 ft(perim.) 1985 sqft	HTM= 47.2	Load 11706 Btuh 11706 Btuh
<b>Envelope Subtotal:</b>						<b>26016 Btuh</b>
<b>Infiltration</b>	Type Natural	Wholehouse ACH 0.20	Volume(cuft) 17865	Wall Ratio 1.00	CFM= 58.7	2575 Btuh
<b>Duct load</b>	Average sealed, R6.0, Supply(Con), Return(Con) (DLM of 0.000)					0 Btuh
<b>All Zones</b>	<b>Sensible Subtotal All Zones</b>					<b>28591 Btuh</b>

### WHOLE HOUSE TOTALS

<b>Totals for Heating</b>	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss Total Heat Loss	(Ex:0 cfm; Sup:0 cfm)	28591 Btuh 0 Btuh 28591 Btuh
---------------------------	---	-----------------------	------------------------------------

### EQUIPMENT

1. Electric Heat Pump	#	42000 Btuh
-----------------------	---	------------

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