

# Residential System Sizing Calculation

## Summary

Moss

Project Title:  
Moss Residence

Lake City, FL 32055

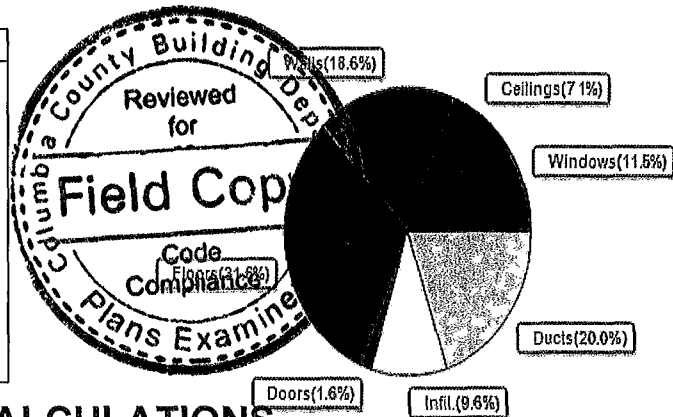
2/10/2025

Location for weather data. Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)					
Humidity data: Interior RH (50%) Outdoor wet bulb (79F) Humidity difference(54gr.)					
Winter design temperature(MJ8 99%/Cu)33 F			Summer design temperature(MJ8 99%/Cu)99 F		
Winter setpoint 70 F			Summer setpoint 75 F		
Winter temperature difference 37 F			Summer temperature difference 24 F		
<b>Total heating load calculation</b>		<b>42650 Btuh</b>	<b>Total cooling load calculation</b>		<b>39007 Btuh</b>
Submitted heating capacity		% of calc Btuh	Submitted cooling capacity		% of calc Btuh
Total (Electric Heat Pump)		106.8 45540	Sensible (SHR = 0.75)		82.4 26644
Heat Pump + Auxiliary(0.0kW)		106.8 45540	Latent		133.2 8881
			Total (Electric Heat Pump)		91.1 35525

## WINTER CALCULATIONS

Winter Heating Load (for 2936 sqft)

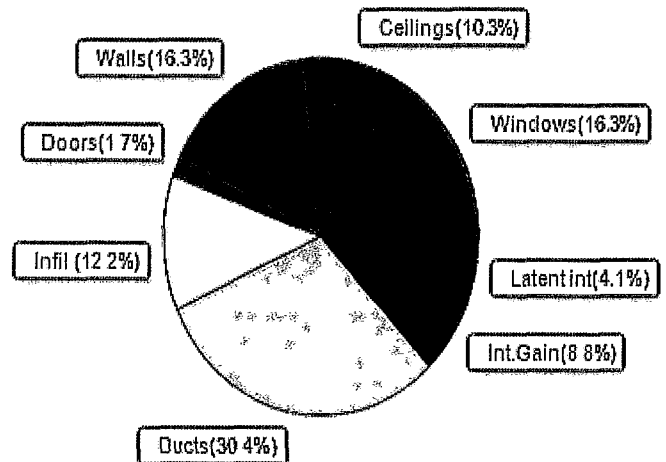
Load component		Load	
Window total	369 sqft	4920	Btuh
Wall total	2409 sqft	7912	Btuh
Door total	40 sqft	681	Btuh
Ceiling total	3230 sqft	3033	Btuh
Floor total	2936 sqft	13477	Btuh
Infiltration	101 cfm	4104	Btuh
Duct loss		8525	Btuh
<b>Subtotal</b>		<b>42650</b>	<b>Btuh</b>
Ventilation	Ex:0 cfm; Sup:0 cfm	0	Btuh
<b>TOTAL HEAT LOSS</b>		<b>42650</b>	<b>Btuh</b>



## SUMMER CALCULATIONS

Summer Cooling Load (for 2936 sqft)

Load component		Load	
Window total	369 sqft	6339	Btuh
Wall total	2409 sqft	6340	Btuh
Door total	40 sqft	644	Btuh
Ceiling total	3230 sqft	4017	Btuh
Floor total		0	Btuh
Infiltration	76 cfm	1996	Btuh
Internal gain		3440	Btuh
Duct gain		9563	Btuh
Sens. Ventilation	Ex:0 cfm; Sup:0 cfm	0	Btuh
Blower Load		0	Btuh
<b>Total sensible gain</b>		<b>32338</b>	<b>Btuh</b>
Latent gain(ducts)		2291	Btuh
Latent gain(infiltration)		2777	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1600	Btuh
<b>Total latent gain</b>		<b>6668</b>	<b>Btuh</b>
<b>TOTAL HEAT GAIN</b>		<b>39007</b>	<b>Btuh</b>



8th Edition

EnergyGauge® System Sizing

PREPARED BY: *Will C. [Signature]*

DATE: 2/10/2025

# System Sizing Calculations - Winter

## Residential Load - Whole House Component Details

Moss

Project Title.

Lake City, FL 32055

Moss Residence  
Building Type: User

2/10/2025

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 37.0 °F (MJ8 99%/Cu)  
Winter Setpoint: 70 °F (Required Manual J default)

Component Loads for Whole House							
Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM= Load
1	2, NFRC 0.25	Vinyl	0.36	S	15.0	13.3	200 Btuh
2	2, NFRC 0.25	TIM	0.36	S	13.3	13.3	178 Btuh
3	2, NFRC 0.25	Vinyl	0.36	S	8.0	13.3	107 Btuh
4	2, NFRC 0.25	Vinyl	0.36	S	36.0	13.3	480 Btuh
5	2, NFRC 0.25	Vinyl	0.36	S	6.0	13.3	80 Btuh
6	2, NFRC 0.25	Vinyl	0.36	E	3.0	13.3	40 Btuh
7	2, NFRC 0.25	Vinyl	0.36	E	16.0	13.3	213 Btuh
8	2, NFRC 0.25	Vinyl	0.36	N	72.0	13.3	959 Btuh
9	2, NFRC 0.25	Vinyl	0.36	N	6.0	13.3	80 Btuh
10	2, NFRC 0.25	TIM	0.36	W	24.0	13.3	320 Btuh
11	2, NFRC 0.25	Vinyl	0.36	N	128.0	13.3	1705 Btuh
12	2, NFRC 0.25	Vinyl	0.36	N	6.0	13.3	80 Btuh
13	2, NFRC 0.25	Vinyl	0.36	W	30.0	13.3	400 Btuh
14	2, NFRC 0.25	Vinyl	0.36	W	6.0	13.3	80 Btuh
Window Total					369.3(sqft)		4920 Btuh
Walls	Type	Ornt.	Ueff	R-Value (Cav/Sh)	Area	X	HTM= Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	131	3.28	429 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	18	3.28	59 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	39	3.28	127 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	20	3.28	66 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	97	3.28	320 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	20	3.28	66 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	89	3.28	292 Btuh
8	Frame - Wood	- Adj	(0.089)	13.0/0.0	108	3.28	355 Btuh
9	Frame - Wood	- Adj	(0.089)	13.0/0.0	208	3.28	683 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	214	3.28	701 Btuh
11	Frame - Wood	- Ext	(0.089)	13.0/0.0	299	3.28	981 Btuh
12	Frame - Wood	- Ext	(0.089)	13.0/0.0	56	3.28	184 Btuh
13	Frame - Wood	- Ext	(0.089)	13.0/0.0	57	3.28	187 Btuh
14	Frame - Wood	- Ext	(0.089)	13.0/0.0	321	3.28	1054 Btuh
15	Frame - Wood	- Ext	(0.089)	13.0/0.0	140	3.28	458 Btuh
16	Frame - Wood	- Ext	(0.089)	13.0/0.0	594	3.28	1951 Btuh
Wall Total					2409(sqft)		7912 Btuh
Doors	Type	Storm	Ueff		Area	X	HTM= Load
1	Insulated - Exterior, n		(0.460)		20	17.0	340 Btuh
2	Insulated - Garage, n		(0.460)		20	17.0	340 Btuh
Door Total					40(sqft)		681 Btuh
Ceilings	Type/Color/Surface	Ueff.	R-Value		Area	X	HTM= Load
1	Flat ceil/D/Shing	(0.025)	38.0/0.0		3230	0.94	3033 Btuh
Ceiling Total					3230(sqft)		3033 Btuh

# Manual J Winter Calculations

## Residential Load - Component Details (continued)

Moss

Project Title:  
Moss Residence  
Building Type: User

Lake City, FL 32055

2/10/2025

<b>Floors</b> 1	Type Slab On Grade Floor Total	Ueff. (1.180)	R-Value 0.0	Size X 308.7 ft(perim.) 2936 sqft	HTM= 43.7	Load 13477 Btuh 13477 Btuh
Envelope Subtotal:						30022 Btuh
<b>Infiltration</b>	Type Natural	Wholehouse ACH 0.23	Volume(cuft) 26424	Wall Ratio 1.00	CFM= 101.3	4104 Btuh
<b>Duct load</b>	Average sealed, R6 0, Supply(Att), Return(Att)				(DLM of 0.250)	8525 Btuh
<b>All Zones</b>	<b>Sensible Subtotal All Zones</b>					<b>42650 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)	42650 Btuh 0 Btuh 42650 Btuh
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### EQUIPMENT

1 Electric Heat Pump	#	45540 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



# Manual J Summer Calculations

## Residential Load - Component Details (continued)

Moss

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

Lake City, FL 32055

2/10/2025

	Envelope Subtotal.					17339 Btuh
<b>Infiltration</b>	Type Natural	Average ACH 0.17	Volume(cuft) 26424	Wall Ratio 1	CFM= 76.0	Load 1996 Btuh
<b>Internal gain</b>		Occupants 8	Btuh/occupant X 230	Appliance +	1600	Load 3440 Btuh
	Sensible Envelope Load.					22776 Btuh
<b>Duct load</b>	Average sealed,Supply(R6 0-Attic), Return(R6 0-Attic)				(DGM of 0.420)	9563 Btuh
	<b>Sensible Load All Zones</b>					<b>32338 Btuh</b>

# Manual J Summer Calculations

## Residential Load - Component Details (continued)

Moss

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

Lake City, FL 32055

2/10/2025

<b>WHOLE HOUSE TOTALS</b>
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	<b>Sensible Envelope Load All Zones</b>	<b>22776 Btuh</b>
	Sensible Duct Load	9563 Btuh
	<b>Total Sensible Zone Loads</b>	<b>32338 Btuh</b>
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
<b>Whole House Totals for Cooling</b>	<b>Total sensible gain</b>	<b>32338 Btuh</b>
	Latent infiltration gain (for 54 gr. humidity difference)	2777 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	2291 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	<b>Latent total gain</b>	<b>6668 Btuh</b>
	<b>TOTAL GAIN</b>	<b>39007 Btuh</b>

<b>EQUIPMENT</b>
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1 Central Unit	#	35525 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(1/2))  
 (Ornt - compass orientation)



Version 8