

Residential System Sizing Calculation

Summary

Moss

Project Title:
Moss Residence

Lake City, FL 32055

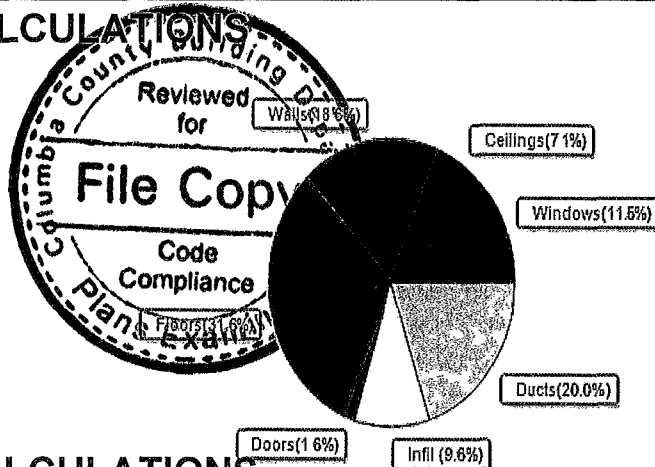
2/10/2025

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
Total heating load calculation	42650 Btuh	Total cooling load calculation	39007 Btuh
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)

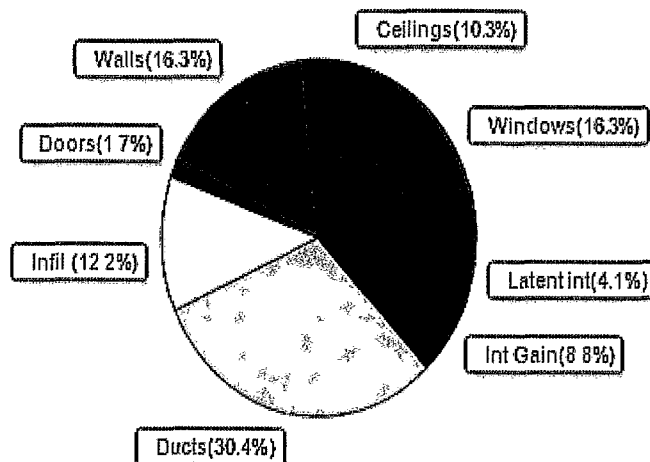
Load component		Load
Window total	369 sqft	4920 Btuh
Wall total	2409 sqft	7912 Btuh
Door total	40 sqft	681 Btuh
Ceiling total	3230 sqft	3033 Btuh
Floor total	2936 sqft	13477 Btuh
Infiltration	101 cfm	4104 Btuh
Duct loss		8525 Btuh
Subtotal		42650 Btuh
Ventilation	Ex.0 cfm; Sup.0 cfm	0 Btuh
TOTAL HEAT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



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
Total sensible gain		32338 Btuh
Latent gain(ducts)		2291 Btuh
Latent gain(infiltration)		2777 Btuh
Latent gain(ventilation)		0 Btuh
Latent gain(internal/occupants/other)		1600 Btuh
Total latent gain		6668 Btuh
TOTAL HEAT GAIN		39007 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY:

DATE:

2 / 10 / 2025

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Moss

Lake City, FL 32055

Project Title:
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

Lake City, FL 32055

Project Title:
Moss Residence
Building Type: User

2/10/2025

Floors 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
Infiltration	Type Natural	Wholehouse ACH 0.23	Volume(cuft) 26424	Wall Ratio 1.00	CFM= 101.3	4104 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.250)					8525 Btuh
All Zones	Sensible Subtotal All Zones					42650 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	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

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Moss

Project Title:
Moss Residence

Lake City, FL 32055

2/10/2025

Reference City: Gainesville, FL (Defaults)
Humidity difference: 54gr.

Temperature Difference: 24.0F(MJ8 99%/Cu)
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	0.25	0.36	No	No	S	1.5ft	1.0ft	15.0	15.0	0.0	14	16	208 Btuh
2	2 NFRC	0.25	0.36	No	No	S	9.5ft	1.0ft	13.3	13.3	0.0	14	16	185 Btuh
3	2 NFRC	0.25	0.36	No	No	S	9.5ft	1.0ft	8.0	8.0	0.0	14	16	111 Btuh
4	2 NFRC	0.25	0.36	No	No	S	7.5ft	1.0ft	36.0	36.0	0.0	14	16	500 Btuh
5	2 NFRC	0.25	0.36	No	No	S	1.5ft	1.0ft	6.0	6.0	0.0	14	16	83 Btuh
6	2 NFRC	0.25	0.36	No	No	E	1.5ft.	1.0ft.	3.0	0.7	2.3	14	33	84 Btuh
7	2 NFRC	0.25	0.36	No	No	E	1.5ft	1.0ft	16.0	1.0	15.0	14	33	505 Btuh
8	2 NFRC	0.25	0.36	No	No	N	1.5ft	1.0ft	72.0	0.0	72.0	14	14	1001 Btuh
9	2 NFRC	0.25	0.36	No	No	N	1.5ft	1.0ft	6.0	0.0	6.0	14	14	83 Btuh
10	2 NFRC	0.25	0.36	No	No	W	10.5f	1.0ft	24.0	23.1	0.9	14	33	350 Btuh
11	2 NFRC	0.25	0.36	No	No	N	10.5f	1.0ft	128.0	0.0	128.0	14	14	1779 Btuh
12	2 NFRC	0.25	0.36	No	No	N	1.5ft	1.0ft	6.0	0.0	6.0	14	14	83 Btuh
13	2 NFRC	0.25	0.36	No	No	W	1.5ft	1.0ft	30.0	1.5	28.5	14	33	955 Btuh
14	2 NFRC	0.25	0.36	No	No	W	1.5ft	1.0ft	6.0	0.5	5.5	14	33	187 Btuh
Excursion AE														
Window Total							369 (sqft)							6339 Btuh
Walls	Type	U-Value		R-Value		Area(sqft)		HTM		Load				
1	Frame - Wood - Ext	0.09	13.0/0.0	130.5	2.7	353 Btuh								
2	Frame - Wood - Ext	0.09	13.0/0.0	18.0	2.7	49 Btuh								
3	Frame - Wood - Ext	0.09	13.0/0.0	38.7	2.7	105 Btuh								
4	Frame - Wood - Ext	0.09	13.0/0.0	20.0	2.7	54 Btuh								
5	Frame - Wood - Ext	0.09	13.0/0.0	97.3	2.7	263 Btuh								
6	Frame - Wood - Ext	0.09	13.0/0.0	20.0	2.7	54 Btuh								
7	Frame - Wood - Ext	0.09	13.0/0.0	89.0	2.7	241 Btuh								
8	Frame - Wood - Adj	0.09	13.0/0.0	108.0	2.1	230 Btuh								
9	Frame - Wood - Adj	0.09	13.0/0.0	208.0	2.1	443 Btuh								
10	Frame - Wood - Ext	0.09	13.0/0.0	213.5	2.7	578 Btuh								
11	Frame - Wood - Ext	0.09	13.0/0.0	298.7	2.7	809 Btuh								
12	Frame - Wood - Ext	0.09	13.0/0.0	56.0	2.7	152 Btuh								
13	Frame - Wood - Ext	0.09	13.0/0.0	57.0	2.7	154 Btuh								
14	Frame - Wood - Ext	0.09	13.0/0.0	321.0	2.7	869 Btuh								
15	Frame - Wood - Ext	0.09	13.0/0.0	139.5	2.7	378 Btuh								
16	Frame - Wood - Ext	0.09	13.0/0.0	594.0	2.7	1608 Btuh								
Wall Total				2409 (sqft)		6340 Btuh								
Doors	Type	Area (sqft)		HTM		Load								
1	Insulated - Exterior	20.0		16.1		322 Btuh								
2	Insulated - Garage	20.0		16.1		322 Btuh								
Door Total		40 (sqft)				644 Btuh								
Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load								
1	Vented Attic/DarkShingle/RB	0.025	38.0/0.0	3229.6	1.24	4017 Btuh								
Ceiling Total				3230 (sqft)		4017 Btuh								
Floors	Type	R-Value		Size	HTM	Load								
1	Slab On Grade	0.0		2936 (ft-perimeter)	0.0	0 Btuh								
Floor Total				2936.0 (sqft)		0 Btuh								

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

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

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	22776 Btuh
	Sensible Duct Load	9563 Btuh
	Total Sensible Zone Loads	32338 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	32338 Btuh
	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
	Latent total gain	6668 Btuh
	TOTAL GAIN	39007 Btuh

EQUIPMENT

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(½))
(Ornt - compass orientation)



Version 8