

Residential System Sizing Calculation

Summary

N/A

Project Title:
Lot 1 Crosswinds

Lake City, FL 32025

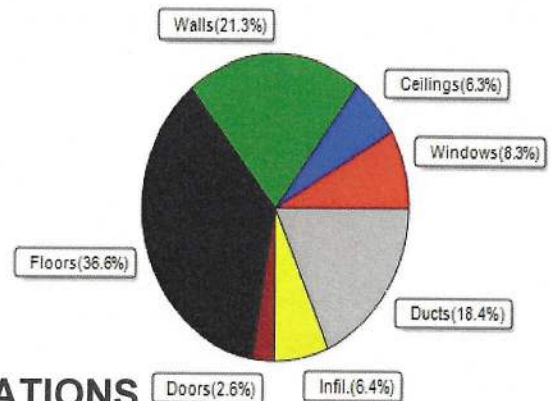
6/26/2025

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 26097 Btuh			Total cooling load calculation 22051 Btuh		
Submitted heating capacity % of calc Btuh			Submitted cooling capacity % of calc Btuh		
Total (Electric Heat Pump) 139.1 36300			Sensible (SHR = 0.75) 148.1 27225		
Heat Pump + Auxiliary(0.0kW) 139.1 36300			Latent 247.8 9075		
			Total (Electric Heat Pump) 164.6 36300		

WINTER CALCULATIONS

Winter Heating Load (for 1677 sqft)

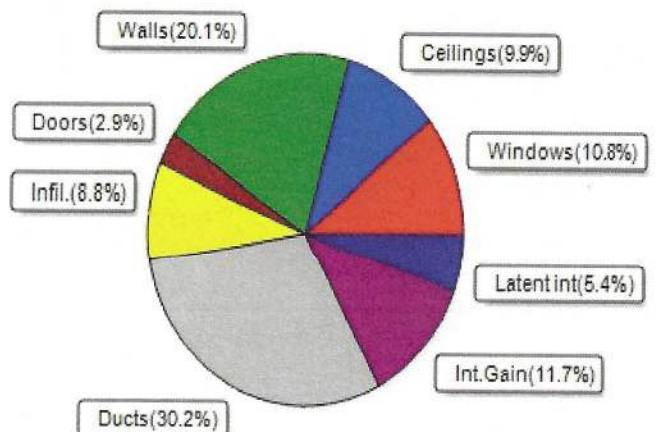
Load component		Load
Window total	163 sqft	2176 Btuh
Wall total	1696 sqft	5569 Btuh
Door total	40 sqft	681 Btuh
Ceiling total	1760 sqft	1653 Btuh
Floor total	1677 sqft	9547 Btuh
Infiltration	41 cfm	1674 Btuh
Duct loss		4798 Btuh
Subtotal		26097 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm		0 Btuh
TOTAL HEAT LOSS		26097 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1677 sqft)

Load component		Load
Window total	163 sqft	2384 Btuh
Wall total	1696 sqft	4441 Btuh
Door total	40 sqft	644 Btuh
Ceiling total	1760 sqft	2189 Btuh
Floor total		0 Btuh
Infiltration	31 cfm	815 Btuh
Internal gain		2580 Btuh
Duct gain		5337 Btuh
Sens. Ventilation Ex:0 cfm; Sup:0 cfm		0 Btuh
Blower Load		0 Btuh
Total sensible gain		18389 Btuh
Latent gain(ducts)		1329 Btuh
Latent gain(infiltration)		1133 Btuh
Latent gain(ventilation)		0 Btuh
Latent gain(internal/occupants/other)		1200 Btuh
Total latent gain		3662 Btuh
TOTAL HEAT GAIN		22051 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 6 / 26 / 2025

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

N/A

Lake City, FL 32025

Project Title:
Lot 1 Crosswinds
Building Type: User

6/26/2025

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	9.0		13.3	120 Btuh
2	2, NFRC 0.25	Vinyl	0.36	S	13.3		13.3	178 Btuh
3	2, NFRC 0.25	Vinyl	0.36	S	30.0		13.3	400 Btuh
4	2, NFRC 0.25	Vinyl	0.36	S	15.0		13.3	200 Btuh
5	2, NFRC 0.25	Vinyl	0.36	E	4.0		13.3	53 Btuh
6	2, NFRC 0.25	Vinyl	0.36	N	15.0		13.3	200 Btuh
7	2, NFRC 0.25	Vinyl	0.36	N	20.0		13.3	266 Btuh
8	2, NFRC 0.25	Vinyl	0.36	N	9.0		13.3	120 Btuh
9	2, NFRC 0.25	Vinyl	0.36	N	30.0		13.3	400 Btuh
10	2, NFRC 0.25	Vinyl	0.36	N	4.0		13.3	53 Btuh
11	2, NFRC 0.25	Vinyl	0.36	W	4.0		13.3	53 Btuh
12	2, NFRC 0.25	Vinyl	0.36	N	10.0		13.3	133 Btuh
Window Total					163.3(sqft)			2176 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	60		3.28	197 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	129		3.28	423 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	96		3.28	315 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	302		3.28	992 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	99		3.28	325 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	108		3.28	355 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	147		3.28	483 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	72		3.28	236 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	248		3.28	814 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	176		3.28	578 Btuh
11	Frame - Wood	- Adj	(0.089)	13.0/0.0	190		3.28	624 Btuh
12	Frame - Wood	- Adj	(0.089)	13.0/0.0	69		3.28	227 Btuh
Wall Total					1696(sqft)			5569 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	1760		0.94	1653 Btuh
Ceiling Total					1760(sqft)			1653 Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	218.7 ft(perim.)		43.7	9547 Btuh
Floor Total					1677 sqft			9547 Btuh
Envelope Subtotal:								19625 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

N/A

Lake City, FL 32025

Project Title:
Lot 1 Crosswinds
Building Type: User

6/26/2025

Infiltration	Type Natural	Wholehouse ACH 0.16	Volume(cuft) 15093	Wall Ratio 1.00	CFM= 41.3	1674 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.225)					4798 Btuh
All Zones	Sensible Subtotal All Zones					26097 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	26097 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	26097 Btuh

EQUIPMENT

1. Electric Heat Pump	#	36300 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

N/A

Lake City, FL 32025

Project Title:
Lot 1 Crosswinds

6/26/2025

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.	9.0	9.0	0.0	14	16	125 Btuh				
2	2 NFRC	0.25, 0.36	No	No	S		6.5ft.	1.0ft.	13.3	13.3	0.0	14	16	185 Btuh				
3	2 NFRC	0.25, 0.36	No	No	S		6.5ft.	1.0ft.	30.0	30.0	0.0	14	16	417 Btuh				
4	2 NFRC	0.25, 0.36	No	No	S		1.5ft.	1.0ft.	15.0	15.0	0.0	14	16	208 Btuh				
5	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	1.0ft.	4.0	1.0	3.0	14	33	113 Btuh				
6	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	15.0	0.0	15.0	14	14	208 Btuh				
7	2 NFRC	0.25, 0.36	No	No	N		9.5ft.	1.0ft.	20.0	0.0	20.0	14	14	278 Btuh				
8	2 NFRC	0.25, 0.36	No	No	N		9.5ft.	1.0ft.	9.0	0.0	9.0	14	14	125 Btuh				
9	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	30.0	0.0	30.0	14	14	417 Btuh				
10	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	4.0	0.0	4.0	14	14	56 Btuh				
11	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	4.0	1.0	3.0	14	33	113 Btuh				
12	2 NFRC	0.25, 0.36	No	No	N		9.5ft.	1.0ft.	10.0	0.0	10.0	14	14	139 Btuh				
Window Total									163 (sqft)					2384 Btuh				
Walls	Type		U-Value		R-Value		Area(sqft)		HTM		Load							
					Cav/Sheath													
1	Frame - Wood - Ext		0.09		13.0/0.0		60.0		2.7		162 Btuh							
2	Frame - Wood - Ext		0.09		13.0/0.0		128.7		2.7		348 Btuh							
3	Frame - Wood - Ext		0.09		13.0/0.0		96.0		2.7		260 Btuh							
4	Frame - Wood - Ext		0.09		13.0/0.0		302.0		2.7		818 Btuh							
5	Frame - Wood - Ext		0.09		13.0/0.0		99.0		2.7		268 Btuh							
6	Frame - Wood - Ext		0.09		13.0/0.0		108.0		2.7		292 Btuh							
7	Frame - Wood - Ext		0.09		13.0/0.0		147.0		2.7		398 Btuh							
8	Frame - Wood - Ext		0.09		13.0/0.0		72.0		2.7		195 Btuh							
9	Frame - Wood - Ext		0.09		13.0/0.0		248.0		2.7		671 Btuh							
10	Frame - Wood - Ext		0.09		13.0/0.0		176.0		2.7		476 Btuh							
11	Frame - Wood - Adj		0.09		13.0/0.0		190.0		2.1		405 Btuh							
12	Frame - Wood - Adj		0.09		13.0/0.0		69.0		2.1		147 Btuh							
Wall Total							1696 (sqft)					4441 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		1760.0		1.24		2189 Btuh							
Ceiling Total							1760 (sqft)			2189 Btuh								
Floors	Type		R-Value		Size		HTM		Load									
1	Slab On Grade		0.0		1677 (ft-perimeter)		0.0		0 Btuh									
Floor Total							1677.0 (sqft)			0 Btuh								
Envelope Subtotal:													9658 Btuh					

Manual J Summer Calculations

Residential Load - Component Details (continued)

N/A

Project Title:
Lot 1 Crosswinds

Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL 32025

6/26/2025

Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.12	15093	1	31.0	815 Btuh
Internal gain		Occupants	Btuh/occupant		Appliance	Load
		6	X 230	+	1200	2580 Btuh
					Sensible Envelope Load:	13052 Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic)				(DGM of 0.409)	5337 Btuh
					Sensible Load All Zones	18389 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

N/A

Project Title:
Lot 1 Crosswinds

Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL 32025

6/26/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	13052 Btuh
	Sensible Duct Load	5337 Btuh
	Total Sensible Zone Loads	18389 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	18389 Btuh
	Latent infiltration gain (for 54 gr. humidity difference)	1133 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1329 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	3662 Btuh
	TOTAL GAIN	22051 Btuh

EQUIPMENT

1. Central Unit	#	36300 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