

Residential System Sizing Calculation

Summary

Aron Goodenbury
1431 SE Myrtis Rd
Lake City, FL 32025

Project Title:
Goodenbury Residence

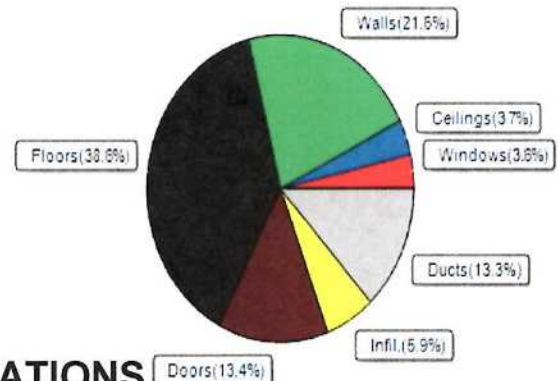
5/15/2026

Location for weather data: Gainesville, FL - Defaults: Latitude(30) Altitude(164 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (76F) Humidity difference(47gr.)			
Winter design temperature(MJ8 99%)	33 F	Summer design temperature(MJ8 99%)	92 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	37 F	Summer temperature difference	17 F
Total heating load calculation	13578 Btuh	Total cooling load calculation	11978 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	132.6 18000	Sensible (SHR = 0.75)	139.9 13500
Heat Pump + Auxiliary(0.0kW)	132.6 18000	Latent	193.2 4500
		Total (Electric Heat Pump)	150.3 18000

WINTER CALCULATIONS

Winter Heating Load (for 800 sqft)

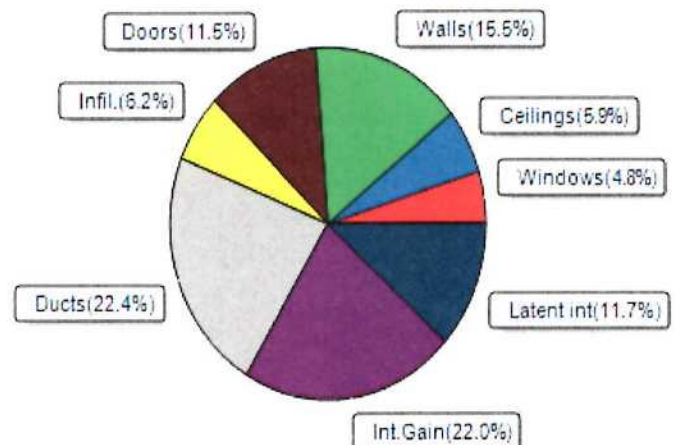
Load component	Load
Window total 40 sqft	488 Btuh
Wall total 933 sqft	2930 Btuh
Door total 107 sqft	1815 Btuh
Ceiling total 800 sqft	507 Btuh
Floor total 800 sqft	5239 Btuh
Infiltration 20 cfm	798 Btuh
Duct loss	1800 Btuh
Subtotal	13578 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	13578 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 800 sqft)

Load component	Load
Window total 40 sqft	569 Btuh
Wall total 933 sqft	1861 Btuh
Door total 107 sqft	1374 Btuh
Ceiling total 800 sqft	712 Btuh
Floor total	0 Btuh
Infiltration 15 cfm	275 Btuh
Internal gain	2630 Btuh
Duct gain	2227 Btuh
Sens. Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	9648 Btuh
Latent gain(ducts)	459 Btuh
Latent gain(infiltration)	470 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1400 Btuh
Total latent gain	2329 Btuh
TOTAL HEAT GAIN	11978 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY:

DATE: 5/15/26

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Aron Goodenbury
1431 SE Myrtis Rd
Lake City, FL 32025

Project Title:
Goodenbury Residence
Building Type: User

5/15/2026

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 37.0 °F (MJ8 99%)
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 0.21	Metal	0.33	E	15.0		12.2	183 Btuh
2	2, NFRC 0.21	Metal	0.33	S	16.7		12.2	204 Btuh
3	2, NFRC 0.21	Metal	0.33	W	8.3		12.2	102 Btuh
Window Total					40.0(sqft)			488 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.085)	13.0/1.0	340		3.14	1067 Btuh
2	Frame - Wood	- Ext	(0.085)	13.0/1.0	165		3.14	518 Btuh
3	Frame - Wood	- Ext	(0.085)	13.0/1.0	257		3.14	806 Btuh
4	Frame - Wood	- Ext	(0.085)	13.0/1.0	172		3.14	539 Btuh
Wall Total					933(sqft)			2930 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		20		17.0	340 Btuh
2	Insulated - Exterior, n		(0.460)		20		17.0	340 Btuh
3	Insulated - Exterior, n		(0.460)		67		17.0	1135 Btuh
Door Total					107(sqft)			1815Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.017)	30.0/30.0	800		0.63	507 Btuh
Ceiling Total					800(sqft)			507Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	120.0 ft(perim.)		43.7	5239 Btuh
Floor Total					800 sqft			5239 Btuh
Envelope Subtotal:								10980 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural		0.16	7200	1.00	19.7		798 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.153)							1800 Btuh
All Zones	Sensible Subtotal All Zones							13578 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Aron Goodenbury
1431 SE Myrtis Rd
Lake City, FL 32025

Project Title:
Goodenbury Residence
Building Type: User

5/15/2026

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm) Total Heat Loss	13578 Btuh 0 Btuh 13578 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	18000 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

Aron Goodenbury
1431 SE Myrtis Rd
Lake City, FL 32025

Project Title:
Goodenbury Residence

5/15/2026

Reference City: Gainesville, FL (Defaults)
Humidity difference: 47gr.

Temperature Difference: 17.0F(MJ8 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	0.21, 0.33	B-L	No	E		1.0ft	2.3ft	15.0	0.0	15.0	8	19	282	Btuh	
2	2 NFRC	0.21, 0.33	B-L	No	S		10.0f	2.3ft	16.7	16.7	0.0	8	9	128	Btuh	
3	2 NFRC	0.21, 0.33	B-L	No	W		1.0ft	2.3ft	8.3	0.0	8.3	8	19	157	Btuh	
	Excursion													2	Btuh	
	Window Total								40 (sqft)					569	Btuh	
Walls	Type						U-Value	R-Value	Area(sqft)		HTM		Load			
								Cav/Sheath								
	1	Frame - Wood - Ext					0.08	13.0/1.0	340.0		2.0		678 Btuh			
	2	Frame - Wood - Ext					0.08	13.0/1.0	165.0		2.0		329 Btuh			
	3	Frame - Wood - Ext					0.08	13.0/1.0	256.7		2.0		512 Btuh			
	4	Frame - Wood - Ext					0.08	13.0/1.0	171.7		2.0		342 Btuh			
	Wall Total							933 (sqft)				1861 Btuh				
Doors	Type						Area (sqft)		HTM		Load					
	1	Insulated - Exterior					20.0		12.9		258 Btuh					
	2	Insulated - Exterior					20.0		12.9		258 Btuh					
	3	Insulated - Exterior					66.7		12.9		859 Btuh					
	Door Total							107 (sqft)				1374 Btuh				
Ceilings	Type/Color/Surface						U-Value	R-Value	Area(sqft)		HTM		Load			
	1	Vented Attic/DarkShingle					0.017	30.0/30.0	800.0		0.89		712 Btuh			
	Ceiling Total							800 (sqft)				712 Btuh				
Floors	Type						R-Value		Size		HTM		Load			
	1	Slab On Grade					0.0		800 (ft-perimeter)		0.0		0 Btuh			
	Floor Total							800.0 (sqft)				0 Btuh				
	Envelope Subtotal:													4517 Btuh		
Infiltration	Type						Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load	
	Natural						0.12		7200		1		14.8		275 Btuh	
Internal gain						Occupants		Btuh/occupant		Appliance		Load				
						1		X 230		+		2400		2630 Btuh		
	Sensible Envelope Load:													7422 Btuh		
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic)										(DGM of 0.300)		2227 Btuh			
	Sensible Load All Zones													9648 Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

Aron Goodenbury
1431 SE Myrtis Rd
Lake City, FL 32025

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Goodenbury Residence

5/15/2026

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	7422 Btuh
	Sensible Duct Load	2227 Btuh
	Total Sensible Zone Loads	9648 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	9648 Btuh
	Latent infiltration gain (for 47 gr. humidity difference)	470 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	459 Btuh
	Latent occupant gain (1.0 people @ 200 Btuh per person)	200 Btuh
	Latent other gain	1200 Btuh
	Latent total gain	2329 Btuh
	TOTAL GAIN	11978 Btuh

EQUIPMENT

1. Central Unit	#	18000 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