

Residential System Sizing Calculation

Summary

Gary & Lyndi Farley
SE Press Ruth Drive
Lake City, FL 32025

Project Title:
Farley Residence

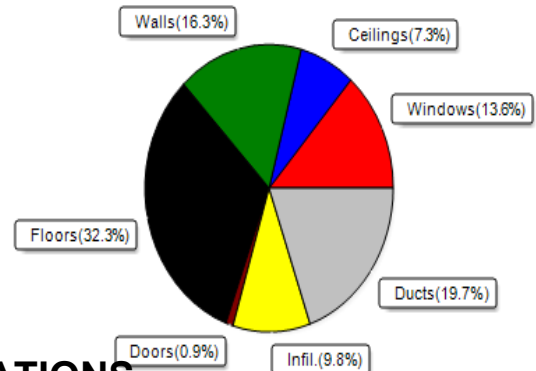
8/13/2025

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	36032 Btuh	Total cooling load calculation	33774 Btuh
Submitted heating capacity % of calc Btuh		Submitted cooling capacity % of calc Btuh	
Total (Electric Heat Pump) 107.5 38735		Sensible (SHR = 0.75) 83.4 23172	
Heat Pump + Auxiliary(0.0kW) 107.5 38735		Latent 129.1 7724	
		Total (Electric Heat Pump) 91.5 30896	

WINTER CALCULATIONS

Winter Heating Load (for 2538 sqft)

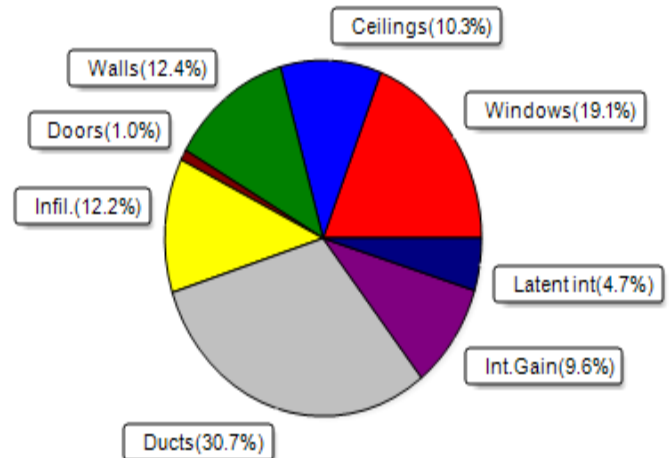
Load component		Load	
Window total	368 sqft	4902	Btuh
Wall total	2012 sqft	5885	Btuh
Door total	20 sqft	340	Btuh
Ceiling total	2792 sqft	2622	Btuh
Floor total	2538 sqft	11643	Btuh
Infiltration	88 cfm	3548	Btuh
Duct loss		7093	Btuh
Subtotal		36032	Btuh
Ventilation Ex:0 cfm; Sup:0 cfm		0	Btuh
TOTAL HEAT LOSS		36032	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 2538 sqft)

Load component		Load	
Window total	368 sqft	6441	Btuh
Wall total	2012 sqft	4194	Btuh
Door total	20 sqft	322	Btuh
Ceiling total	2792 sqft	3472	Btuh
Floor total		0	Btuh
Infiltration	66 cfm	1726	Btuh
Internal gain		3240	Btuh
Duct gain		8399	Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm		0	Btuh
Blower Load		0	Btuh
Total sensible gain		27793	Btuh
Latent gain(ducts)		1980	Btuh
Latent gain(infiltration)		2400	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1600	Btuh
Total latent gain		5981	Btuh
TOTAL HEAT GAIN		33774	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 8 / 13 / 2025

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Gary & Lyndi Farley
SE Press Ruth Drive
Lake City, FL 32025

Project Title:
Farley Residence
Building Type: User

8/13/2025

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	SW	8.0		13.3	107 Btuh
2	2, NFRC 0.25	Vinyl	0.36	W	60.0		13.3	799 Btuh
3	2, NFRC 0.25	TIM	0.36	W	40.0		13.3	533 Btuh
4	2, NFRC 0.25	Vinyl	0.36	S	6.0		13.3	80 Btuh
5	2, NFRC 0.25	Vinyl	0.36	S	10.0		13.3	133 Btuh
6	2, NFRC 0.25	Vinyl	0.36	S	10.0		13.3	133 Btuh
7	2, NFRC 0.25	Vinyl	0.36	E	30.0		13.3	400 Btuh
8	2, NFRC 0.25	Vinyl	0.36	E	80.0		13.3	1066 Btuh
9	2, NFRC 0.25	Vinyl	0.36	E	18.0		13.3	240 Btuh
10	2, NFRC 0.25	TIM	0.36	S	20.0		13.3	266 Btuh
11	2, NFRC 0.25	Vinyl	0.36	S	20.0		13.3	266 Btuh
12	2, NFRC 0.25	Vinyl	0.36	E	30.0		13.3	400 Btuh
13	2, NFRC 0.25	Vinyl	0.36	E	6.0		13.3	80 Btuh
14	2, NFRC 0.25	Vinyl	0.36	N	6.0		13.3	80 Btuh
15	2, NFRC 0.25	Vinyl	0.36	N	16.0		13.3	213 Btuh
16	2, NFRC 0.25	Vinyl	0.36	N	8.0		13.3	107 Btuh
Window Total					368.0(sqft)			4902 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	94		2.86	269 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	54		2.86	154 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	194		2.86	555 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	40		2.86	113 Btuh
5	Frame - Wood	- Ext	(0.077)	19.0/0.0	48		2.86	137 Btuh
6	Frame - Wood	- Ext	(0.077)	19.0/0.0	177		2.86	506 Btuh
7	Frame - Wood	- Ext	(0.077)	19.0/0.0	48		2.86	137 Btuh
8	Frame - Wood	- Ext	(0.077)	19.0/0.0	40		2.86	113 Btuh
9	Frame - Wood	- Ext	(0.077)	19.0/0.0	80		2.86	227 Btuh
10	Frame - Wood	- Ext	(0.077)	19.0/0.0	36		2.86	103 Btuh
11	Frame - Wood	- Ext	(0.077)	19.0/0.0	189		2.86	539 Btuh
12	Frame - Wood	- Ext	(0.077)	19.0/0.0	52		2.86	149 Btuh
13	Frame - Wood	- Ext	(0.077)	19.0/0.0	118		2.86	337 Btuh
14	Frame - Wood	- Ext	(0.077)	19.0/0.0	192		2.86	549 Btuh
15	Frame - Wood	- Ext	(0.077)	19.0/0.0	341		2.86	974 Btuh
16	Frame - Wood	- Adj	(0.089)	13.0/0.0	205		3.28	673 Btuh
17	Frame - Wood	- Ext	(0.089)	13.0/0.0	107		3.28	350 Btuh
Wall Total					2012(sqft)			5885 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Garage,	n	(0.460)		20		17.0	340 Btuh
Door Total					20(sqft)			340Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Gary & Lyndi Farley
SE Press Ruth Drive
Lake City, FL 32025

Project Title:
Farley Residence
Building Type: User

8/13/2025

Ceilings 1	Type/Color/Surface Flat ceil/D/Metal Ceiling Total	Ueff. (0.025)	R-Value 38.0/0.0	Area X 2792 2792(sqft)	HTM= 0.94	Load 2622 Btuh 2622Btuh
Floors 1	Type Slab On Grade Floor Total	Ueff. (1.180)	R-Value 0.0	Size X 266.7 ft(perim.) 2538 sqft	HTM= 43.7	Load 11643 Btuh 11643 Btuh
	Envelope Subtotal:					25391 Btuh
Infiltration	Type Natural	Wholehouse ACH 0.23	Volume(cuft) 22842	Wall Ratio 1.00	CFM= 87.6	3548 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.245)					7093 Btuh
All Zones	Sensible Subtotal All Zones					36032 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss Total Heat Loss	(Ex:0 cfm; Sup:0 cfm)	36032 Btuh 0 Btuh 36032 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	38735 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

Gary & Lyndi Farley
SE Press Ruth Drive
Lake City, FL 32025

Project Title:
Farley Residence

8/13/2025

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	SW		13.5f	1.0ft.	8.0	8.0	0.0	14	27	111	Btuh
2	2 NFRC	0.25, 0.36	No	No	W		7.5ft.	1.0ft.	60.0	60.0	0.0	14	33	834	Btuh
3	2 NFRC	0.25, 0.36	No	No	W		7.5ft.	1.0ft.	40.0	31.3	8.7	14	33	719	Btuh
4	2 NFRC	0.25, 0.36	No	No	S		7.5ft.	1.0ft.	6.0	6.0	0.0	14	16	83	Btuh
5	2 NFRC	0.25, 0.36	No	No	S		12.3f	1.0ft.	10.0	10.0	0.0	14	16	139	Btuh
6	2 NFRC	0.25, 0.36	No	No	S		12.5f	1.0ft.	10.0	10.0	0.0	14	16	139	Btuh
7	2 NFRC	0.25, 0.36	No	No	E		13.5f	1.0ft.	30.0	30.0	0.0	14	33	417	Btuh
8	2 NFRC	0.25, 0.36	No	No	E		9.5ft.	1.0ft.	80.0	80.0	0.0	14	33	1112	Btuh
9	2 NFRC	0.25, 0.36	No	No	E		9.5ft.	1.0ft.	18.0	18.0	0.0	14	33	250	Btuh
10	2 NFRC	0.25, 0.36	No	No	S		7.5ft.	1.0ft.	20.0	20.0	0.0	14	16	278	Btuh
11	2 NFRC	0.25, 0.36	No	No	S		1.5ft.	1.0ft.	20.0	20.0	0.0	14	16	278	Btuh
12	2 NFRC	0.25, 0.36	No	No	E		1.0ft.	4.0ft.	30.0	0.0	30.0	14	33	982	Btuh
13	2 NFRC	0.25, 0.36	No	No	E		1.0ft.	4.0ft.	6.0	0.0	6.0	14	33	196	Btuh
14	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	6.0	0.0	6.0	14	14	83	Btuh
15	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	16.0	0.0	16.0	14	14	222	Btuh
16	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	8.0	0.0	8.0	14	14	111	Btuh
	Excursion													485	Btuh
	Window Total								368 (sqft)					6441 Btuh	
Walls	Type	U-Value		R-Value		Area(sqft)		HTM		Load					
1	Frame - Wood - Ext		0.08		19.0/0.0		94.0		2.0		192	Btuh			
2	Frame - Wood - Ext		0.08		19.0/0.0		54.0		2.0		110	Btuh			
3	Frame - Wood - Ext		0.08		19.0/0.0		194.0		2.0		396	Btuh			
4	Frame - Wood - Ext		0.08		19.0/0.0		39.5		2.0		81	Btuh			
5	Frame - Wood - Ext		0.08		19.0/0.0		48.0		2.0		98	Btuh			
6	Frame - Wood - Ext		0.08		19.0/0.0		177.0		2.0		361	Btuh			
7	Frame - Wood - Ext		0.08		19.0/0.0		48.0		2.0		98	Btuh			
8	Frame - Wood - Ext		0.08		19.0/0.0		39.5		2.0		81	Btuh			
9	Frame - Wood - Ext		0.08		19.0/0.0		79.5		2.0		162	Btuh			
10	Frame - Wood - Ext		0.08		19.0/0.0		36.0		2.0		73	Btuh			
11	Frame - Wood - Ext		0.08		19.0/0.0		188.5		2.0		385	Btuh			
12	Frame - Wood - Ext		0.08		19.0/0.0		52.0		2.0		106	Btuh			
13	Frame - Wood - Ext		0.08		19.0/0.0		118.0		2.0		241	Btuh			
14	Frame - Wood - Ext		0.08		19.0/0.0		192.0		2.0		392	Btuh			
15	Frame - Wood - Ext		0.08		19.0/0.0		340.5		2.0		695	Btuh			
16	Frame - Wood - Adj		0.09		13.0/0.0		205.0		2.1		437	Btuh			
17	Frame - Wood - Ext		0.09		13.0/0.0		106.5		2.7		288	Btuh			
	Wall Total								2012 (sqft)				4194 Btuh		
Doors	Type	Area (sqft)		HTM		Load									
1	Insulated - Garage		20.0		16.1		322	Btuh							
	Door Total						20 (sqft)			322 Btuh					
Ceilings	Type/Color/Surface	U-Value		R-Value		Area(sqft)		HTM		Load					
1	Vented Attic/DarkMetal/RB		0.025		38.0/0.0		2791.7		1.24		3472	Btuh			
	Ceiling Total						2792 (sqft)				3472	Btuh			
Floors	Type	R-Value		Size		HTM		Load							
1	Slab On Grade		0.0		2538 (ft-perimeter)		0.0		0	Btuh					
	Floor Total						2538.0 (sqft)			0 Btuh					

Manual J Summer Calculations

Residential Load - Component Details (continued)

Gary & Lyndi Farley
SE Press Ruth Drive
Lake City, FL 32025

Project Title:
Farley Residence

Climate:FL_GAINESVILLE_REGIONAL_A

8/13/2025

	Envelope Subtotal:					14429 Btuh
Infiltration	Type Natural	Average ACH 0.17	Volume(cuft) 22842	Wall Ratio 1	CFM= 65.7	Load 1726 Btuh
Internal gain		Occupants 8	Btuh/occupant X 230	Appliance +	1400	Load 3240 Btuh
	Sensible Envelope Load:					19395 Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.433)					8399 Btuh
	Sensible Load All Zones					27793 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Gary & Lyndi Farley
SE Press Ruth Drive
Lake City, FL 32025

Project Title: Farley Residence

Climate:FL_GAINESVILLE_REGIONAL_A

8/13/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	19395 Btuh
	Sensible Duct Load	8399 Btuh
	Total Sensible Zone Loads	27793 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	27793 Btuh
	Latent infiltration gain (for 54 gr. humidity difference)	2400 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1980 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	5981 Btuh
	TOTAL GAIN	33774 Btuh

EQUIPMENT

1. Central Unit	#	30896 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