

Residential System Sizing Calculation

Summary

David & Julie Simque

Project Title:
David Simque Res

Lake City, FL 32025

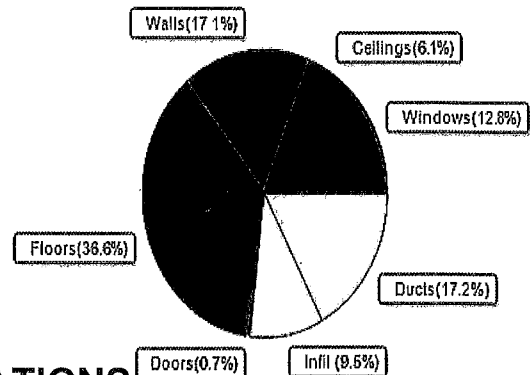
2/21/2025

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 57139 Btuh			Total cooling load calculation 47862 Btuh		
Submitted heating capacity		% of calc	Submitted cooling capacity		% of calc
Total (Electric Heat Pump)		107.1	Sensible (SHR = 0.70)		75.9
Heat Pump + Auxiliary(0.0kW)		107.1	Latent		167.9
		61214	Total (Electric Heat Pump)		90.9
		61214			43490

WINTER CALCULATIONS

Winter Heating Load (for 3355 sqft)

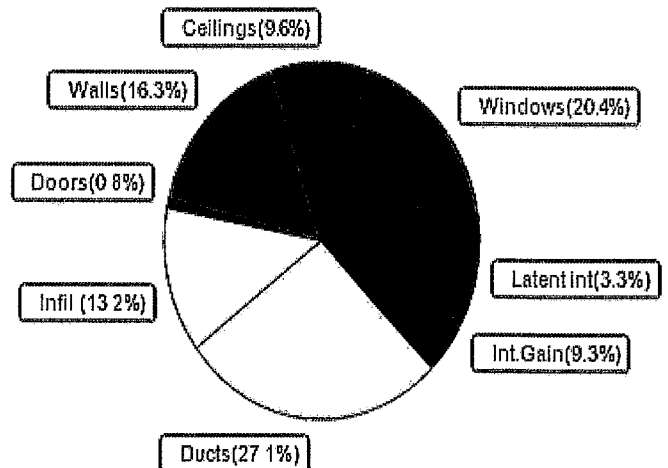
Load component		Load	
Window total	550 sqft	7326	Btuh
Wall total	2979 sqft	9784	Btuh
Door total	24 sqft	408	Btuh
Ceiling total	3691 sqft	3466	Btuh
Floor total	3355 sqft	20899	Btuh
Infiltration	134 cfm	5435	Btuh
Duct loss		9821	Btuh
Subtotal		57139	Btuh
Ventilation	Ex:0 cfm; Sup:0 cfm	0	Btuh
TOTAL HEAT LOSS		57139	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 3355 sqft)

Load component		Load	
Window total	550 sqft	9750	Btuh
Wall total	2979 sqft	7801	Btuh
Door total	24 sqft	386	Btuh
Ceiling total	3691 sqft	4590	Btuh
Floor total		0	Btuh
Infiltration	101 cfm	2644	Btuh
Internal gain		4440	Btuh
Duct gain		10478	Btuh
Sens.Ventilation	Ex:0 cfm; Sup:0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		40090	Btuh
Latent gain(ducts)		2495	Btuh
Latent gain(infiltration)		3678	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1600	Btuh
Total latent gain		7772	Btuh
TOTAL HEAT GAIN		47862	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: Will C. Fry

DATE: 2/21/2025

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

David & Julie Simque

Project Title:

David Simque Res

Lake City, FL 32025

Building Type: User

2/21/2025

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	Panels/Type	Frame	U	Orientation	Area(sqft)	X	HTM= Load
1	2, NFRC 0.25	Vinyl	0.36	S	8.0	13.3	107 Btuh
2	2, NFRC 0.25	Vinyl	0.36	S	18.0	13.3	240 Btuh
3	2, NFRC 0.25	Vinyl	0.36	S	72.0	13.3	959 Btuh
4	2, NFRC 0.25	TIM	0.36	S	48.0	13.3	639 Btuh
5	2, NFRC 0.25	Vinyl	0.36	E	8.0	13.3	107 Btuh
6	2, NFRC 0.25	Vinyl	0.36	E	6.0	13.3	80 Btuh
7	2, NFRC 0.25	Vinyl	0.36	N	36.0	13.3	480 Btuh
8	2, NFRC 0.25	Vinyl	0.36	W	36.0	13.3	480 Btuh
9	2, NFRC 0.25	TIM	0.36	W	24.0	13.3	320 Btuh
10	2, NFRC 0.25	Vinyl	0.36	N	24.0	13.3	320 Btuh
11	2, NFRC 0.25	Metal	0.36	N	160.0	13.3	2131 Btuh
12	2, NFRC 0.25	TIM	0.36	E	24.0	13.3	320 Btuh
13	2, NFRC 0.25	Vinyl	0.36	N	24.0	13.3	320 Btuh
14	2, NFRC 0.25	Vinyl	0.36	N	24.0	13.3	320 Btuh
15	2, NFRC 0.25	Vinyl	0.36	W	8.0	13.3	107 Btuh
16	2, NFRC 0.25	Vinyl	0.36	W	18.0	13.3	240 Btuh
17	2, NFRC 0.25	Vinyl	0.36	W	12.0	13.3	160 Btuh
Window Total					550.0(sqft)		7326 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM= Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	187	3.28	615 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	143	3.28	471 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	280	3.28	920 Btuh
4	Frame - Wood	- Adj	(0.089)	13.0/0.0	202	3.28	662 Btuh
5	Frame - Wood	- Adj	(0.089)	13.0/0.0	256	3.28	841 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	328	3.28	1076 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	264	3.28	867 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	183	3.28	602 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	246	3.28	808 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	186	3.28	611 Btuh
11	Frame - Wood	- Ext	(0.089)	13.0/0.0	135	3.28	444 Btuh
12	Frame - Wood	- Ext	(0.089)	13.0/0.0	569	3.28	1868 Btuh
Wall Total					2979(sqft)		9784 Btuh
Doors	Type	Storm	Ueff	R-Value	Area	X	HTM= Load
1	Insulated - Garage,	n	(0.460)		24	17.0	408 Btuh
Door Total					24(sqft)		408Btuh
Ceilings	Type/Color/Surface	Ueff.	R-Value	Area	X	HTM= Load	
1	Flat ceil/D/Shing	(0.025)	38.0/0.0	3691	0.94	3466 Btuh	
Ceiling Total					3691(sqft)		3466Btuh
Floors	Type	Ueff.	R-Value	Size	X	HTM= Load	
1	Slab On Grade	(1.180)	0.0	478.7 ft(perim.)	43.7	20899 Btuh	
Floor Total					3355 sqft		20899 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

David & Julie Simque

Project Title:
David Simque Res
Building Type: User

Lake City, FL 32025

2/21/2025

	Envelope Subtotal:					41883 Btuh
Infiltration	Type Natural	Wholehouse ACH 0.24	Volume(cuft) 33550	Wall Ratio 1.00	CFM= 134.2	5435 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.208)				9821 Btuh	
All Zones	Sensible Subtotal All Zones					57139 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	57139 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	57139 Btuh

EQUIPMENT

1. Electric Heat Pump	#	61214 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)

David & Julie Simque

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
David Simque Res

Lake City, FL 32025

2/21/2025

Infiltration	Type Natural	Average ACH 0.18	Volume(cuft) 33550	Wall Ratio 1	CFM= 100.6	Load 2644 Btuh
Internal gain		Occupants 8	Btuh/occupant X 230	Appliance +	2600	Load 4440 Btuh
	Sensible Envelope Load.					29612 Btuh
Duct load	Average sealed, Supply(R6 0-Attic), Return(R6 0-Attic)				(DGM of 0.354)	10478 Btuh
	Sensible Load All Zones					40090 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

David & Julie Simque

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
David Simque Res

Lake City, FL 32025

2/21/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	29612 Btuh
	Sensible Duct Load	10478 Btuh
	Total Sensible Zone Loads	40090 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	40090 Btuh
	Latent infiltration gain (for 54 gr. humidity difference)	3678 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	2495 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	7772 Btuh
	TOTAL GAIN	47862 Btuh

EQUIPMENT

1 Central Unit	#	43490 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