

Residential System Sizing Calculation

Summary

Project Title:
Sessions Residence

, FL

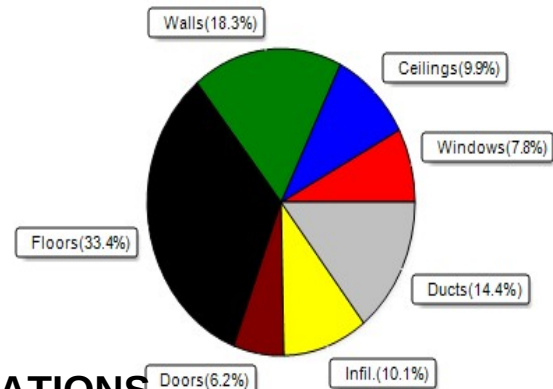
8/10/2026

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(100 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(51gr.)			
Winter design temperature(TMY3 99%)	30 F	Summer design temperature(TMY3 99%)	94 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	40 F	Summer temperature difference	19 F
Total heating load calculation	26300 Btuh	Total cooling load calculation	25618 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	182.5 48000	Sensible (SHR = 0.85)	182.7 40800
Heat Pump + Auxiliary(0.0kW)	182.5 48000	Latent	218.9 7200
		Total (Electric Heat Pump)	187.4 48000

WINTER CALCULATIONS

Winter Heating Load (for 2052 sqft)

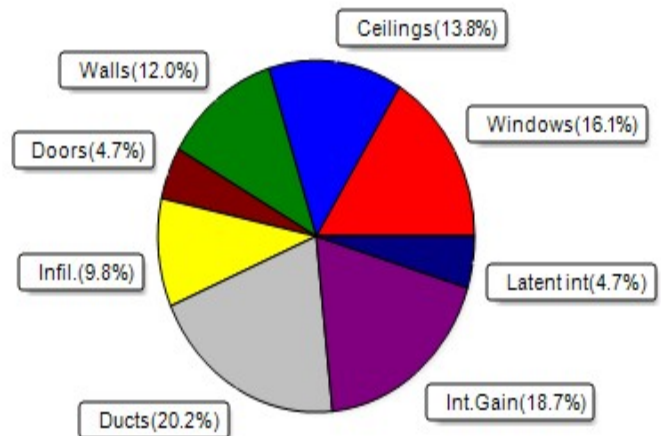
Load component	Load
Window total 232 sqft	2042 Btuh
Wall total 1354 sqft	4807 Btuh
Door total 88 sqft	1619 Btuh
Ceiling total 2052 sqft	2614 Btuh
Floor total 2052 sqft	8779 Btuh
Infiltration 61 cfm	2662 Btuh
Duct loss	3777 Btuh
Subtotal	26300 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	26300 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 2052 sqft)

Load component	Load
Window total 232 sqft	4126 Btuh
Wall total 1354 sqft	3065 Btuh
Door total 88 sqft	1214 Btuh
Ceiling total 2052 sqft	3529 Btuh
Floor total	0 Btuh
Infiltration 46 cfm	948 Btuh
Internal gain	4780 Btuh
Duct gain	4667 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	22329 Btuh
Latent gain(ducts)	516 Btuh
Latent gain(infiltration)	1574 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1200 Btuh
Total latent gain	3289 Btuh
TOTAL HEAT GAIN	25618 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 8-10-26

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Sessions Residence

, FL

8/10/2026

Reference City: Gainesville, FL (Defaults)
Humidity difference: 51gr.

Temperature Difference: 19.0F(TMY3 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	0.33	0.22	No	No	N	1.3ft.	9.5ft.	16.0	0.0	16.0	11	11	178	Btuh		
2	2 NFRC	0.33	0.22	No	No	N	1.3ft.	9.5ft.	36.0	0.0	36.0	11	11	400	Btuh		
3	2 NFRC	0.33	0.22	No	No	E	1.3ft.	1.5ft.	4.0	0.0	4.0	11	36	144	Btuh		
4	2 NFRC	0.33	0.22	No	No	S	1.3ft.	7.5ft.	144.0	1.8	142.2	11	14	1968	Btuh		
5	2 NFRC	0.33	0.22	No	No	W	1.3ft.	1.5ft.	16.0	0.0	16.0	11	36	576	Btuh		
6	2 NFRC	0.33	0.22	No	No	W	1.3ft.	1.5ft.	4.0	0.0	4.0	11	36	144	Btuh		
7	2 NFRC	0.33	0.22	No	No	W	1.3ft.	1.5ft.	12.0	0.0	12.0	11	36	432	Btuh		
	Excursion AE																
	Window Total								232 (sqft)					4126 Btuh			
Walls	Type						U-Value		R-Value		Area(sqft)		HTM		Load		
									Cav/Sheath								
1	Frame - Wood - Ext						0.089		13.0/0.0		397.0		2.26		899 Btuh		
2	Frame - Wood - Ext						0.089		13.0/0.0		320.0		2.26		724 Btuh		
3	Frame - Wood - Ext						0.089		13.0/0.0		345.0		2.26		781 Btuh		
4	Frame - Wood - Ext						0.089		13.0/0.0		292.0		2.26		661 Btuh		
	Wall Total										1354 (sqft)				3065 Btuh		
Doors	Type										Area (sqft)		HTM		Load		
1	Insulated - Exterior										24.0		13.8		331 Btuh		
2	Insulated - Exterior										40.0		13.8		552 Btuh		
3	Insulated - Exterior										24.0		13.8		331 Btuh		
	Door Total										88 (sqft)				1214 Btuh		
Ceilings	Type/Color/Surface						U-Value		R-Value		Area(sqft)		HTM		Load		
1	Vented Attic/DarkMetal						0.032		30.0/0.0		2052.0		1.72		3529 Btuh		
	Ceiling Total										2052 (sqft)				3529 Btuh		
Floors	Type								R-Value		Size		HTM		Load		
1	Slab On Grade								0.0		2052 (ft-perimeter)		0.0		0 Btuh		
	Floor Total										2052.0 (sqft)				0 Btuh		
	Envelope Subtotal:													11934 Btuh			
Infiltration	Type						Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load		
	Natural						0.15		18468		1		45.5		948 Btuh		
Internal gain							Occupants		Btuh/occupant				Appliance		Load		
							6		X 230		+		3400		4780 Btuh		
	Sensible Envelope Load:													17662 Btuh			
Duct load	Extremelysealed, Supply(R6.0-Attic),Return(R6.0-Attic)													(DGM of 0.264)		4667 Btuh	
	Sensible Load All Zones													22329 Btuh			

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Sessions Residence

, FL

8/10/2026

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	17662 Btuh
	Sensible Duct Load	4667 Btuh
	Total Sensible Zone Loads	22329 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	22329 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1574 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	516 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	3289 Btuh
	TOTAL GAIN	25618 Btuh

EQUIPMENT

1. Central Unit	#	48000 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

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

, FL

Project Title:
Sessions Residence
Building Type: User

8/10/2026

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 °F (TMY3 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 0.33	Vinyl	0.22	N	16.0		8.8	141 Btuh
2	2, NFRC 0.33	Vinyl	0.22	N	36.0		8.8	317 Btuh
3	2, NFRC 0.33	Vinyl	0.22	E	4.0		8.8	35 Btuh
4	2, NFRC 0.33	Vinyl	0.22	S	144.0		8.8	1267 Btuh
5	2, NFRC 0.33	Vinyl	0.22	W	16.0		8.8	141 Btuh
6	2, NFRC 0.33	Vinyl	0.22	W	4.0		8.8	35 Btuh
7	2, NFRC 0.33	Vinyl	0.22	W	12.0		8.8	106 Btuh
	Window Total				232.0(sqft)			2042 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	397		3.55	1409 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	320		3.55	1136 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	345		3.55	1225 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	292		3.55	1037 Btuh
	Wall Total				1354(sqft)			4807 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		24		18.4	442 Btuh
2	Insulated - Exterior, n		(0.460)		40		18.4	736 Btuh
3	Insulated - Exterior, n		(0.460)		24		18.4	442 Btuh
	Door Total				88(sqft)			1619Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Metal		(0.032)	30.0/0.0	2052		1.3	2614 Btuh
	Ceiling Total				2052(sqft)			2614Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	186.0 ft(perim.)		47.2	8779 Btuh
	Floor Total				2052 sqft			8779 Btuh
	Envelope Subtotal:							19861 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.20	18468	1.00	60.7		2662 Btuh
Duct load	Extremely sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.168)							3777 Btuh
All Zones	Sensible Subtotal All Zones							26300 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

, FL

Project Title:
Sessions Residence
Building Type: User

8/10/2026

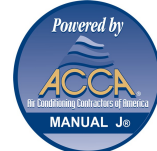
WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	26300 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	26300 Btuh

EQUIPMENT

1. Electric Heat Pump	#	48000 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