

Residential System Sizing Calculation

Summary

Project Title:
Tolar Residence

, FL

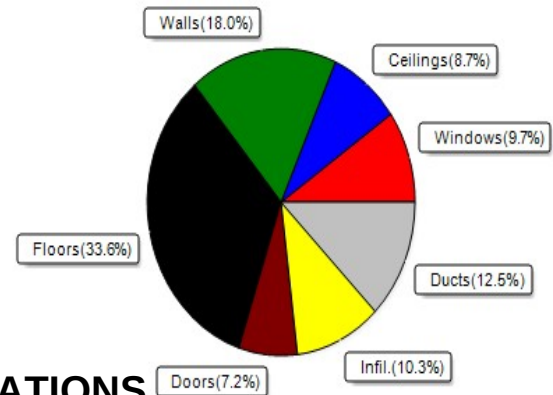
9/25/2025

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	27774 Btuh	Total cooling load calculation	23838 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	129.6 36000	Sensible (SHR = 0.75)	131.8 27000
Heat Pump + Auxiliary(0.0kW)	129.6 36000	Latent	268.3 9000
		Total (Electric Heat Pump)	151.0 36000

WINTER CALCULATIONS

Winter Heating Load (for 1891 sqft)

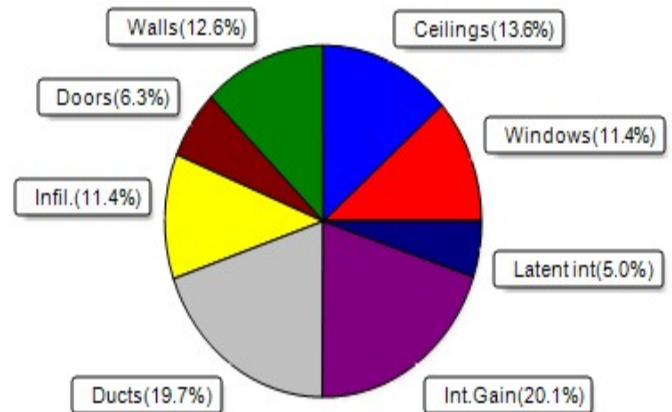
Load component	Load
Window total 258 sqft	2683 Btuh
Wall total 1410 sqft	5006 Btuh
Door total 108 sqft	1987 Btuh
Ceiling total 1891 sqft	2409 Btuh
Floor total 1891 sqft	9346 Btuh
Infiltration 65 cfm	2862 Btuh
Duct loss	3481 Btuh
Subtotal	27774 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	27774 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1891 sqft)

Load component	Load
Window total 258 sqft	2718 Btuh
Wall total 1410 sqft	2999 Btuh
Door total 108 sqft	1490 Btuh
Ceiling total 1891 sqft	3252 Btuh
Floor total	0 Btuh
Infiltration 49 cfm	1020 Btuh
Internal gain	4780 Btuh
Duct gain	4224 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	20483 Btuh
Latent gain(ducts)	463 Btuh
Latent gain(infiltration)	1692 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1200 Btuh
Total latent gain	3355 Btuh
TOTAL HEAT GAIN	23838 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 9-25-25

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Tolar Residence

, FL

9/25/2025

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	0.20, 0.26	No	No	N	1.5ft	1.3ft	108.0	0.0	108.0	9	9	988	Btuh	
2	2 NFRC	0.20, 0.26	No	No	N	1.5ft	1.3ft	42.0	0.0	42.0	9	9	384	Btuh	
3	2 NFRC	0.20, 0.26	No	No	W	1.5ft	1.3ft	6.0	0.0	6.0	9	24	145	Btuh	
4	2 NFRC	0.20, 0.26	No	No	S	1.5ft	1.3ft	90.0	90.0	0.0	9	11	823	Btuh	
5	2 NFRC	0.20, 0.26	No	No	W	1.5ft	1.3ft	12.0	0.0	12.0	9	24	291	Btuh	
	Excursion												87	Btuh	
	Window Total							258 (sqft)					2718 Btuh		
Walls	Type					U-Value	R-Value	Area(sqft)			HTM		Load		
							Cav/Sheath								
1	Frame - Wood - Ext					0.09	13.0/0.0	384.0			2.3		869	Btuh	
2	Frame - Wood - Ext					0.09	13.0/0.0	300.0			2.3		679	Btuh	
3	Frame - Wood - Ext					0.09	13.0/0.0	242.0			2.3		548	Btuh	
4	Frame - Wood - Adj					0.09	13.0/0.0	334.0			1.7		563	Btuh	
5	Frame - Wood - Ext					0.09	13.0/0.0	150.0			2.3		340	Btuh	
	Wall Total							1410 (sqft)					2999 Btuh		
Doors	Type							Area (sqft)			HTM		Load		
1	Insulated - Exterior							48.0			13.8		662	Btuh	
2	Insulated - Exterior							40.0			13.8		552	Btuh	
3	Insulated - Garage							20.0			13.8		276	Btuh	
	Door Total							108 (sqft)					1490 Btuh		
Ceilings	Type/Color/Surface					U-Value	R-Value	Area(sqft)			HTM		Load		
1	Vented Attic/DarkShingle					0.032	30.0/0.0	1891.0			1.72		3252	Btuh	
	Ceiling Total							1891 (sqft)					3252 Btuh		
Floors	Type						R-Value	Size			HTM		Load		
1	Slab On Grade						0.0	1891 (ft-perimeter)			0.0		0	Btuh	
	Floor Total							1891.0 (sqft)					0 Btuh		
	Envelope Subtotal:												10460 Btuh		
Infiltration	Type					Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load	
	Natural					0.17		17019		1		48.9		1020	Btuh
Internal gain					Occupants		Btuh/occupant				Appliance		Load		
					6		X 230		+		3400		4780	Btuh	
	Sensible Envelope Load:												16259 Btuh		
Duct load	Extremely sealed, Supply(R6.0-Attic), Return(R6.0-Attic)										(DGM of 0.260)		4224 Btuh		
	Sensible Load All Zones												20483 Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Tolar Residence

, FL

9/25/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	16259 Btuh
	Sensible Duct Load	4224 Btuh
	Total Sensible Zone Loads	20483 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	20483 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1692 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	463 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	3355 Btuh
	TOTAL GAIN	23838 Btuh

EQUIPMENT

1. Central Unit	#	36000 Btuh
-----------------	---	------------

*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:
Tolar Residence
Building Type: User

9/25/2025

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 0.20	Vinyl	0.26	N	108.0		10.4	1123 Btuh
2	2, NFRC 0.20	Vinyl	0.26	N	42.0		10.4	437 Btuh
3	2, NFRC 0.20	Vinyl	0.26	W	6.0		10.4	62 Btuh
4	2, NFRC 0.20	Vinyl	0.26	S	90.0		10.4	936 Btuh
5	2, NFRC 0.20	Vinyl	0.26	W	12.0		10.4	125 Btuh
	Window Total				258.0(sqft)			2683 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	384		3.55	1363 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	300		3.55	1065 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	242		3.55	859 Btuh
4	Frame - Wood	- Adj	(0.089)	13.0/0.0	334		3.55	1186 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	150		3.55	533 Btuh
	Wall Total				1410(sqft)			5006 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior,	n	(0.460)		48		18.4	883 Btuh
2	Insulated - Exterior,	n	(0.460)		40		18.4	736 Btuh
3	Insulated - Garage,	n	(0.460)		20		18.4	368 Btuh
	Door Total				108(sqft)			1987Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.032)	30.0/0.0	1891		1.3	2409 Btuh
	Ceiling Total				1891(sqft)			2409Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	198.0 ft(perim.)		47.2	9346 Btuh
	Floor Total				1891 sqft			9346 Btuh
	Envelope Subtotal:							21431 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.23	17019	1.00	65.3		2862 Btuh
Duct load	Extremely sealed, R6.0, Supply(Att), Return(Att)						(DLM of 0.143)	3481 Btuh
All Zones	Sensible Subtotal All Zones							27774 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

, FL

Project Title:
Tolar Residence
Building Type: User

9/25/2025

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	27774 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	27774 Btuh

EQUIPMENT

1. Electric Heat Pump	#	36000 Btuh
-----------------------	---	------------

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