

Residential System Sizing Calculation

Summary

Project Title:
Joseph Mistretta

, FL

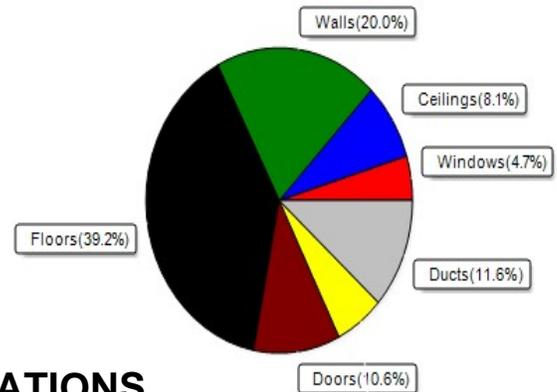
12/23/2025

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	17332	Btuh	Total cooling load calculation	15813	Btuh
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	138.5	24000	Sensible (SHR = 0.75)	131.1	18000
Heat Pump + Auxiliary(0.0kW)	138.5	24000	Latent	288.7	6000
			Total (Electric Heat Pump)	151.8	24000

WINTER CALCULATIONS

Winter Heating Load (for 1105 sqft)

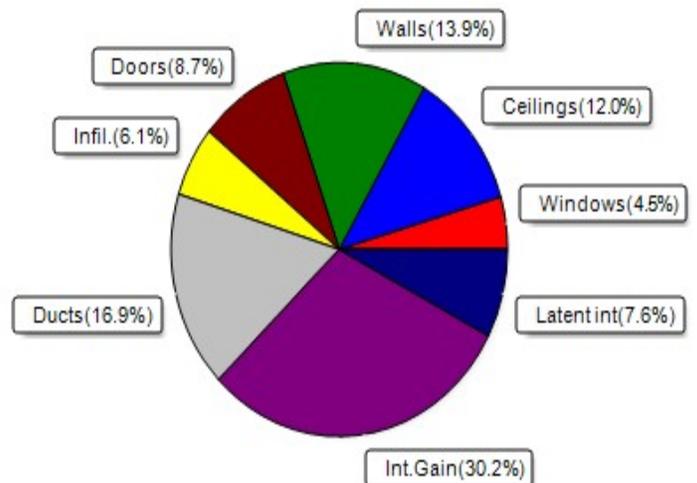
Load component	Load	
Window total	78 sqft	811 Btuh
Wall total	974 sqft	3458 Btuh
Door total	100 sqft	1840 Btuh
Ceiling total	1105 sqft	1408 Btuh
Floor total	1105 sqft	6797 Btuh
Infiltration	23 cfm	1013 Btuh
Duct loss		2006 Btuh
Subtotal		17332 Btuh
Ventilation	Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS		17332 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1105 sqft)

Load component	Load	
Window total	78 sqft	713 Btuh
Wall total	974 sqft	2204 Btuh
Door total	100 sqft	1380 Btuh
Ceiling total	1105 sqft	1900 Btuh
Floor total		0 Btuh
Infiltration	17 cfm	361 Btuh
Internal gain		4780 Btuh
Duct gain		2396 Btuh
Sens.Ventilation	Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load		0 Btuh
Total sensible gain		13735 Btuh
Latent gain(ducts)		280 Btuh
Latent gain(infiltration)		599 Btuh
Latent gain(ventilation)		0 Btuh
Latent gain(internal/occupants/other)		1200 Btuh
Total latent gain		2079 Btuh
TOTAL HEAT GAIN		15813 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 12-23-25

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Joseph Mistretta

, FL

12/23/2025

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	
1	2 NFRC	0.20, 0.26	No	No	N	1.5ft	1.3ft	18.0	0.0	18.0	9	9	165 Btuh
2	2 NFRC	0.20, 0.26	No	No	S	1.5ft	1.3ft	60.0	60.0	0.0	9	11	549 Btuh
Window Total								78 (sqft)					713 Btuh
Walls	Type	U-Value		R-Value		Area(sqft)		HTM		Load			
				Cav/Sheath									
1	Frame - Wood - Ext	0.09	13.0/0.0			366.0		2.3	828 Btuh				
2	Frame - Wood - Ext	0.09	13.0/0.0			152.0		2.3	344 Btuh				
3	Frame - Wood - Ext	0.09	13.0/0.0			210.7		2.3	477 Btuh				
4	Frame - Wood - Ext	0.09	13.0/0.0			32.0		2.3	72 Btuh				
5	Frame - Wood - Ext	0.09	13.0/0.0			53.3		2.3	121 Btuh				
6	Frame - Wood - Ext	0.09	13.0/0.0			160.0		2.3	362 Btuh				
Wall Total						974 (sqft)				2204 Btuh			
Doors	Type	Area (sqft)		HTM		Load							
1	Insulated - Exterior	40.0		13.8		552 Btuh							
2	Wood - Exterior	20.0		13.8		276 Btuh							
3	Insulated - Exterior	40.0		13.8		552 Btuh							
Door Total		100 (sqft)				1380 Btuh							
Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load							
1	Vented Attic/DarkShingle	0.032	30.0/0.0	1105.0	1.72	1900 Btuh							
Ceiling Total				1105 (sqft)		1900 Btuh							
Floors	Type	R-Value	Size	HTM	Load								
1	Slab On Grade	0.0	1105 (ft-perimeter)	0.0	0 Btuh								
Floor Total			1105.0 (sqft)		0 Btuh								
Envelope Subtotal:						6198 Btuh							
Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load							
	Natural	0.12	8840	1	17.3	361 Btuh							
Internal gain	Occupants	Btuh/occupant	Appliance	Load									
	6	X 230	+ 3400	4780 Btuh									
Sensible Envelope Load:						11339 Btuh							
Duct load	Extremely sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.211)				2396 Btuh								
Sensible Load All Zones						13735 Btuh							

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Joseph Mistretta

, FL

12/23/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	11339 Btuh
	Sensible Duct Load	2396 Btuh
	Total Sensible Zone Loads	13735 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	13735 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	599 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	280 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	2079 Btuh
	TOTAL GAIN	15813 Btuh

EQUIPMENT

1. Central Unit	#	24000 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

Project Title:
Joseph Mistretta
Building Type: User

, FL

12/23/2025

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	18.0		10.4	187 Btuh
2	2, NFRC 0.20	Vinyl	0.26	S	60.0		10.4	624 Btuh
	Window Total					78.0(sqft)		811 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	366		3.55	1299 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	152		3.55	540 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	211		3.55	748 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	32		3.55	114 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	53		3.55	189 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	160		3.55	568 Btuh
	Wall Total					974(sqft)		3458 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior,	n	(0.460)		40		18.4	736 Btuh
2	Wood - Exterior,	n	(0.460)		20		18.4	368 Btuh
3	Insulated - Exterior,	n	(0.460)		40		18.4	736 Btuh
	Door Total					100(sqft)		1840Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.032)	30.0/0.0	1105		1.3	1408 Btuh
	Ceiling Total					1105(sqft)		1408Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	144.0 ft(perim.)		47.2	6797 Btuh
	Floor Total					1105 sqft		6797 Btuh
	Envelope Subtotal:							14314 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural		0.16	8840	1.00	23.1		1013 Btuh
Duct load	Extremely sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.131)							2006 Btuh
All Zones	Sensible Subtotal All Zones							17332 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

, FL

Project Title:
Joseph Mistretta
Building Type: User

12/23/2025

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	17332 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	17332 Btuh

EQUIPMENT

1. Electric Heat Pump	#	24000 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