

Residential System Sizing Calculation

Summary

Project Title:
Jones Residence

, FL

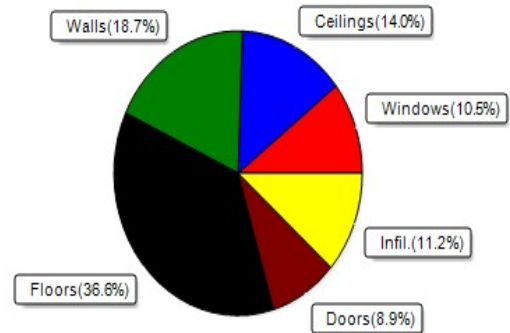
4/16/2025

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	48322 Btuh	Total cooling load calculation	32823 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	124.2 60000	Sensible (SHR = 0.75)	160.6 45000
Heat Pump + Auxiliary(0.0kW)	124.2 60000	Latent	312.1 15000
		Total (Electric Heat Pump)	182.8 60000

WINTER CALCULATIONS

Winter Heating Load (for 3608 sqft)

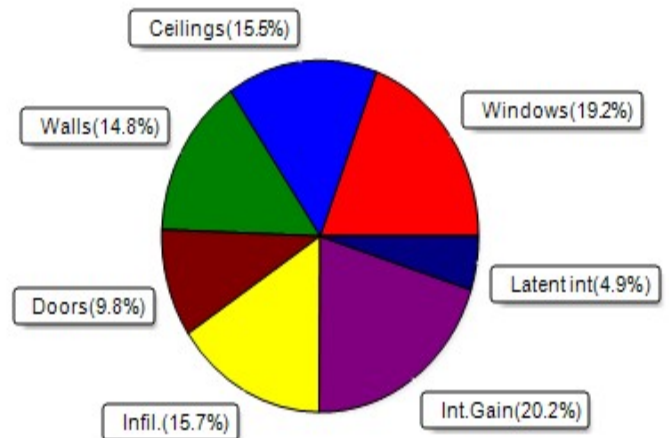
Load component	Load
Window total 487 sqft	5060 Btuh
Wall total 2928 sqft	9050 Btuh
Door total 234 sqft	4306 Btuh
Ceiling total 3608 sqft	6782 Btuh
Floor total 3608 sqft	17700 Btuh
Infiltration 124 cfm	5425 Btuh
Duct loss	0 Btuh
Subtotal	48322 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	48322 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 3608 sqft)

Load component	Load
Window total 487 sqft	6287 Btuh
Wall total 2928 sqft	4842 Btuh
Door total 234 sqft	3229 Btuh
Ceiling total 3608 sqft	5086 Btuh
Floor total	0 Btuh
Infiltration 93 cfm	1933 Btuh
Internal gain	6640 Btuh
Duct gain	0 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	28017 Btuh
Latent gain(ducts)	0 Btuh
Latent gain(infiltration)	3207 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1600 Btuh
Total latent gain	4807 Btuh
TOTAL HEAT GAIN	32823 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____ 4-16-25

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Jones Residence

, FL

4/16/2025

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.	24.0	0.0	24.0	9	9	220 Btuh	
2	2 NFRC	0.20, 0.26	No	No	E	1.5ft.	1.3ft.	30.0	0.0	30.0	9	24	727 Btuh	
3	2 NFRC	0.20, 0.26	No	No	N	1.5ft.	1.3ft.	24.0	0.0	24.0	9	9	220 Btuh	
4	2 NFRC	0.20, 0.26	No	No	N	1.5ft.	1.3ft.	80.0	0.0	80.0	9	9	732 Btuh	
5	2 NFRC	0.20, 0.26	No	No	N	1.5ft.	1.3ft.	30.0	0.0	30.0	9	9	274 Btuh	
6	2 NFRC	0.20, 0.26	No	No	E	1.5ft.	1.3ft.	36.0	0.0	36.0	9	24	872 Btuh	
7	2 NFRC	0.20, 0.26	No	No	E	1.5ft.	1.3ft.	8.0	0.0	8.0	9	24	194 Btuh	
8	2 NFRC	0.20, 0.26	No	No	S	1.5ft.	1.3ft.	36.0	36.0	0.0	9	11	329 Btuh	
9	2 NFRC	0.20, 0.26	No	No	S	1.5ft.	1.3ft.	80.0	71.9	8.1	9	11	744 Btuh	
10	2 NFRC	0.20, 0.26	No	No	S	1.5ft.	1.3ft.	52.5	52.5	0.0	9	11	480 Btuh	
11	2 NFRC	0.20, 0.26	No	No	S	1.5ft.	1.3ft.	36.0	36.0	0.0	9	11	329 Btuh	
12	2 NFRC	0.20, 0.26	No	No	S	1.5ft.	1.3ft.	3.0	3.0	0.0	9	11	27 Btuh	
13	2 NFRC	0.20, 0.26	No	No	W	1.5ft.	1.3ft.	8.0	0.0	8.0	9	24	194 Btuh	
14	2 NFRC	0.20, 0.26	No	No	W	1.5ft.	1.3ft.	30.0	0.0	30.0	9	24	727 Btuh	
15	2 NFRC	0.20, 0.26	No	No	W	1.5ft.	1.3ft.	9.0	0.0	9.0	9	24	218 Btuh	
Window Total								487 (sqft)					6287 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Jones Residence

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Walls	Type	U-Value	R-Value	Area(sqft)	HTM	Load
			Cav/Sheath			
1	Frame - Wood - Ext	0.08	19.0/0.0	36.0	1.7	60 Btuh
2	Frame - Wood - Ext	0.08	19.0/0.0	33.3	1.7	55 Btuh
3	Frame - Wood - Ext	0.08	19.0/0.0	140.0	1.7	232 Btuh
4	Frame - Wood - Ext	0.08	19.0/0.0	272.7	1.7	451 Btuh
5	Frame - Wood - Ext	0.08	19.0/0.0	109.3	1.7	181 Btuh
6	Frame - Wood - Ext	0.08	19.0/0.0	20.0	1.7	33 Btuh
7	Frame - Wood - Ext	0.08	19.0/0.0	113.7	1.7	188 Btuh
8	Frame - Wood - Ext	0.08	19.0/0.0	80.0	1.7	132 Btuh
9	Frame - Wood - Ext	0.08	19.0/0.0	120.0	1.7	198 Btuh
10	Frame - Wood - Ext	0.08	19.0/0.0	309.0	1.7	511 Btuh
11	Frame - Wood - Ext	0.08	19.0/0.0	20.0	1.7	33 Btuh
12	Frame - Wood - Ext	0.08	19.0/0.0	95.3	1.7	158 Btuh
13	Frame - Wood - Ext	0.08	19.0/0.0	30.0	1.7	50 Btuh
14	Frame - Wood - Ext	0.08	19.0/0.0	30.0	1.7	50 Btuh
15	Frame - Wood - Ext	0.08	19.0/0.0	38.3	1.7	63 Btuh
16	Frame - Wood - Ext	0.08	19.0/0.0	30.0	1.7	50 Btuh
17	Frame - Wood - Ext	0.08	19.0/0.0	44.0	1.7	73 Btuh
18	Frame - Wood - Ext	0.08	19.0/0.0	30.0	1.7	50 Btuh
19	Frame - Wood - Ext	0.08	19.0/0.0	38.3	1.7	63 Btuh
20	Frame - Wood - Ext	0.08	19.0/0.0	123.3	1.7	204 Btuh
21	Frame - Wood - Ext	0.08	19.0/0.0	102.7	1.7	170 Btuh
22	Frame - Wood - Ext	0.08	19.0/0.0	110.0	1.7	182 Btuh
23	Frame - Wood - Ext	0.08	19.0/0.0	90.8	1.7	150 Btuh
24	Frame - Wood - Ext	0.08	19.0/0.0	35.0	1.7	58 Btuh
25	Frame - Wood - Ext	0.08	19.0/0.0	100.7	1.7	166 Btuh
26	Frame - Wood - Ext	0.08	19.0/0.0	35.0	1.7	58 Btuh
27	Frame - Wood - Ext	0.08	19.0/0.0	50.3	1.7	83 Btuh
28	Frame - Wood - Ext	0.08	19.0/0.0	690.0	1.7	1141 Btuh
	Wall Total			2928 (sqft)		4842 Btuh
Doors	Type			Area (sqft)	HTM	Load
1	Insulated - Exterior			20.0	13.8	276 Btuh
2	Insulated - Exterior			24.0	13.8	331 Btuh
3	Insulated - Exterior			48.0	13.8	662 Btuh
4	Insulated - Exterior			40.0	13.8	552 Btuh
5	Insulated - Exterior			54.0	13.8	745 Btuh
6	Insulated - Exterior			24.0	13.8	331 Btuh
7	Insulated - Exterior			24.0	13.8	331 Btuh
	Door Total			234 (sqft)		3229 Btuh
Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load
1	SnglAsmb no airsp/DarkShingle	0.047	0.0/21.0	3608.0	1.41	5086 Btuh
	Ceiling Total			3608 (sqft)		5086 Btuh
Floors	Type		R-Value	Size	HTM	Load
1	Slab On Grade		0.0	3608 (ft-perimeter)	0.0	0 Btuh
	Floor Total			3608.0 (sqft)		0 Btuh
				Envelope Subtotal:		19444 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Jones Residence

, FL

4/16/2025

Infiltration	Type Natural	Average ACH 0.15	Volume(cuft) 36080	Wall Ratio 1	CFM= 92.8	Load 1933 Btuh
Internal gain		Occupants 8	Btuh/occupant X 230	Appliance +	4800	Load 6640 Btuh
	Sensible Envelope Load:					28017 Btuh
Duct load	Extremelysealed, Supply(R6.0-Cond), Return(R6.0-Cond) (DGM of 0.000)					0 Btuh
	Sensible Load All Zones					28017 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Jones Residence

, FL

4/16/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	28017 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	28017 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	28017 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	3207 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	4807 Btuh
	TOTAL GAIN	32823 Btuh

EQUIPMENT

1. Central Unit	#	60000 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

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Project Title:
Jones Residence
Building Type: User

, FL

4/16/2025

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	24.0		10.4	250 Btuh
2	2, NFRC 0.20	Vinyl	0.26	E	30.0		10.4	312 Btuh
3	2, NFRC 0.20	Vinyl	0.26	N	24.0		10.4	250 Btuh
4	2, NFRC 0.20	Vinyl	0.26	N	80.0		10.4	832 Btuh
5	2, NFRC 0.20	Vinyl	0.26	N	30.0		10.4	312 Btuh
6	2, NFRC 0.20	Vinyl	0.26	E	36.0		10.4	374 Btuh
7	2, NFRC 0.20	Vinyl	0.26	E	8.0		10.4	83 Btuh
8	2, NFRC 0.20	Vinyl	0.26	S	36.0		10.4	374 Btuh
9	2, NFRC 0.20	Vinyl	0.26	S	80.0		10.4	832 Btuh
10	2, NFRC 0.20	Vinyl	0.26	S	52.5		10.4	546 Btuh
11	2, NFRC 0.20	Vinyl	0.26	S	36.0		10.4	374 Btuh
12	2, NFRC 0.20	Vinyl	0.26	S	3.0		10.4	31 Btuh
13	2, NFRC 0.20	Vinyl	0.26	W	8.0		10.4	83 Btuh
14	2, NFRC 0.20	Vinyl	0.26	W	30.0		10.4	312 Btuh
15	2, NFRC 0.20	Vinyl	0.26	W	9.0		10.4	94 Btuh
Window Total					486.5(sqft)			5060 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	36		3.09	111 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	33		3.09	103 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	140		3.09	433 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	273		3.09	843 Btuh
5	Frame - Wood	- Ext	(0.077)	19.0/0.0	109		3.09	338 Btuh
6	Frame - Wood	- Ext	(0.077)	19.0/0.0	20		3.09	62 Btuh
7	Frame - Wood	- Ext	(0.077)	19.0/0.0	114		3.09	351 Btuh
8	Frame - Wood	- Ext	(0.077)	19.0/0.0	80		3.09	247 Btuh
9	Frame - Wood	- Ext	(0.077)	19.0/0.0	120		3.09	371 Btuh
10	Frame - Wood	- Ext	(0.077)	19.0/0.0	309		3.09	955 Btuh
11	Frame - Wood	- Ext	(0.077)	19.0/0.0	20		3.09	62 Btuh
12	Frame - Wood	- Ext	(0.077)	19.0/0.0	95		3.09	295 Btuh
13	Frame - Wood	- Ext	(0.077)	19.0/0.0	30		3.09	93 Btuh
14	Frame - Wood	- Ext	(0.077)	19.0/0.0	30		3.09	93 Btuh
15	Frame - Wood	- Ext	(0.077)	19.0/0.0	38		3.09	118 Btuh
16	Frame - Wood	- Ext	(0.077)	19.0/0.0	30		3.09	93 Btuh
17	Frame - Wood	- Ext	(0.077)	19.0/0.0	44		3.09	136 Btuh
18	Frame - Wood	- Ext	(0.077)	19.0/0.0	30		3.09	93 Btuh
19	Frame - Wood	- Ext	(0.077)	19.0/0.0	38		3.09	118 Btuh
20	Frame - Wood	- Ext	(0.077)	19.0/0.0	123		3.09	381 Btuh
21	Frame - Wood	- Ext	(0.077)	19.0/0.0	103		3.09	317 Btuh
22	Frame - Wood	- Ext	(0.077)	19.0/0.0	110		3.09	340 Btuh
23	Frame - Wood	- Ext	(0.077)	19.0/0.0	91		3.09	281 Btuh
24	Frame - Wood	- Ext	(0.077)	19.0/0.0	35		3.09	108 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

, FL

Project Title:
Jones Residence
Building Type: User

4/16/2025

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
25	Frame - Wood	- Ext	(0.077)	19.0/0.0	101	3.09	311 Btuh
26	Frame - Wood	- Ext	(0.077)	19.0/0.0	35	3.09	108 Btuh
27	Frame - Wood	- Ext	(0.077)	19.0/0.0	50	3.09	156 Btuh
28	Frame - Wood	- Ext	(0.077)	19.0/0.0	690	3.09	2133 Btuh
	Wall Total				2928(sqft)		9050 Btuh
Doors	Type		Storm Ueff.		Area X	HTM=	Load
1	Insulated - Exterior,	n	(0.460)		20	18.4	368 Btuh
2	Insulated - Exterior,	n	(0.460)		24	18.4	442 Btuh
3	Insulated - Exterior,	n	(0.460)		48	18.4	883 Btuh
4	Insulated - Exterior,	n	(0.460)		40	18.4	736 Btuh
5	Insulated - Exterior,	n	(0.460)		54	18.4	994 Btuh
6	Insulated - Exterior,	n	(0.460)		24	18.4	442 Btuh
7	Insulated - Exterior,	n	(0.460)		24	18.4	442 Btuh
	Door Total				234(sqft)		4306Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area X	HTM=	Load
1	Single as/D/Shing		(0.047)	0.0/21.0	3608	1.9	6782 Btuh
	Ceiling Total				3608(sqft)		6782Btuh
Floors	Type		Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	375.0 ft(perim.)	47.2	17700 Btuh
	Floor Total				3608 sqft		17700 Btuh
	Envelope Subtotal:						42897 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural		0.21	36080	1.00	123.7	5425 Btuh
Duct load	Extremely sealed, R6.0, Supply(Con), Return(Con) (DLM of 0.000)						0 Btuh
All Zones	Sensible Subtotal All Zones						48322 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss Total Heat Loss	(Ex:0 cfm; Sup:0 cfm)	48322 Btuh 0 Btuh 48322 Btuh
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Manual J Winter Calculations

Residential Load - Component Details (continued)

, FL

Project Title:
Jones Residence
Building Type: User

4/16/2025

EQUIPMENT

1. Electric Heat Pump	#	60000 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