

Residential System Sizing Calculation

Summary

352 SW Buttercup Lane
Lake City, FL 32025

Project Title:
352 SW Buttercup Lane

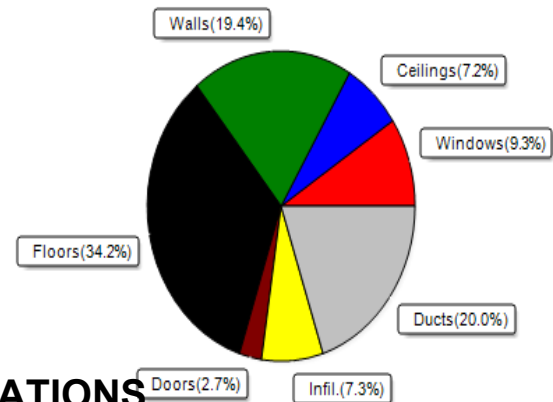
3/2/2023

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 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	27350 Btuh	Total cooling load calculation	21936 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 27350	Sensible (SHR = 0.70)	86.6 15355
Heat Pump + Auxiliary(0.0kW)	100.0 27350	Latent	156.6 6581
		Total (Electric Heat Pump)	100.0 21936

WINTER CALCULATIONS

Winter Heating Load (for 1841 sqft)

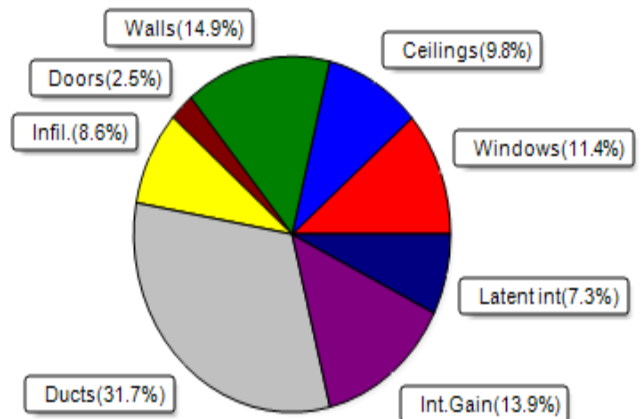
Load component	Load
Window total 177 sqft	2549 Btuh
Wall total 1496 sqft	5311 Btuh
Door total 40 sqft	736 Btuh
Ceiling total 1933 sqft	1962 Btuh
Floor total 1841 sqft	9346 Btuh
Infiltration 45 cfm	1987 Btuh
Duct loss	5458 Btuh
Subtotal	27350 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	27350 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1841 sqft)

Load component	Load
Window total 177 sqft	2490 Btuh
Wall total 1496 sqft	3262 Btuh
Door total 40 sqft	552 Btuh
Ceiling total 1933 sqft	2159 Btuh
Floor total	0 Btuh
Infiltration 34 cfm	708 Btuh
Internal gain	3040 Btuh
Duct gain	5524 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	17734 Btuh
Latent gain(ducts)	1427 Btuh
Latent gain(infiltration)	1175 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1600 Btuh
Total latent gain	4201 Btuh
TOTAL HEAT GAIN	21936 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 3 / 2 / 2022

W. C. [Signature]

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

352 SW Buttercup Lane
Lake City, FL 32025

Project Title:
352 SW Buttercup Lane
Building Type: User

3/2/2023

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 0.25	Vinyl	0.36	N	60.0		14.4	864 Btuh
2	2, NFRC 0.25	Vinyl	0.36	W	16.0		14.4	230 Btuh
3	2, NFRC 0.25	Vinyl	0.36	S	30.0		14.4	432 Btuh
4	2, NFRC 0.25	Vinyl	0.36	S	12.0		14.4	173 Btuh
5	2, NFRC 0.25	TIM	0.36	S	40.0		14.4	576 Btuh
6	2, NFRC 0.25	Vinyl	0.36	S	15.0		14.4	216 Btuh
7	2, NFRC 0.25	Vinyl	0.36	E	4.0		14.4	58 Btuh
Window Total					177.0(sqft)			2549 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	210		3.55	744 Btuh
2	Frame - Wood	- Adj	(0.089)	13.0/0.0	216		3.55	765 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	149		3.55	529 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	32		3.55	112 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	162		3.55	575 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	189		3.55	671 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	72		3.55	256 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	109		3.55	385 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	99		3.55	351 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	260		3.55	923 Btuh
Wall Total					1496(sqft)			5311 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		20		18.4	368 Btuh
2	Insulated - Garage, n		(0.460)		20		18.4	368 Btuh
Door Total					40(sqft)			736Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/M/Shing		(0.025)	38.0/0.0	1933		1.0	1962 Btuh
Ceiling Total					1933(sqft)			1962Btuh
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					1841 sqft			9346 Btuh
Envelope Subtotal:								19904 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural		0.16	16569	1.00	45.4		1987 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.249)							5458 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

352 SW Buttercup Lane
Lake City, FL 32025

Project Title:
352 SW Buttercup Lane
Building Type: User

3/2/2023

All Zones	Sensible Subtotal All Zones	27350 Btuh
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WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm) Total Heat Loss	27350 Btuh 0 Btuh 27350 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	27350 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

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

352 SW Buttercup Lane
Lake City, FL 32025

Project Title:
352 SW Buttercup Lane

3/2/2023

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	0.25, 0.36	No	No	N		4.5ft.	1.0ft.	60.0	0.0	60.0	12	12	726	Btuh
2	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	16.0	1.0	15.0	12	31	477	Btuh
3	2 NFRC	0.25, 0.36	No	No	S		1.5ft.	1.0ft.	30.0	30.0	0.0	12	14	363	Btuh
4	2 NFRC	0.25, 0.36	No	No	S		1.5ft.	1.0ft.	12.0	12.0	0.0	12	14	145	Btuh
5	2 NFRC	0.25, 0.36	No	No	S		9.5ft.	1.0ft.	40.0	40.0	0.0	12	14	484	Btuh
6	2 NFRC	0.25, 0.36	No	No	S		1.5ft.	1.0ft.	15.0	15.0	0.0	12	14	181	Btuh
7	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	1.0ft.	4.0	1.0	3.0	12	31	105	Btuh
	Excursion													9	Btuh
	Window Total								177 (sqft)					2490 Btuh	
Walls	Type					U-Value	R-Value	Area(sqft)			HTM		Load		
							Cav/Sheath								
1	Frame - Wood - Ext					0.09	13.0/0.0	209.5			2.3		474 Btuh		
2	Frame - Wood - Adj					0.09	13.0/0.0	215.5			1.7		363 Btuh		
3	Frame - Wood - Ext					0.09	13.0/0.0	149.0			2.3		337 Btuh		
4	Frame - Wood - Ext					0.09	13.0/0.0	31.5			2.3		71 Btuh		
5	Frame - Wood - Ext					0.09	13.0/0.0	162.0			2.3		367 Btuh		
6	Frame - Wood - Ext					0.09	13.0/0.0	189.0			2.3		428 Btuh		
7	Frame - Wood - Ext					0.09	13.0/0.0	72.0			2.3		163 Btuh		
8	Frame - Wood - Ext					0.09	13.0/0.0	108.5			2.3		246 Btuh		
9	Frame - Wood - Ext					0.09	13.0/0.0	99.0			2.3		224 Btuh		
10	Frame - Wood - Ext					0.09	13.0/0.0	260.0			2.3		588 Btuh		
	Wall Total								1496 (sqft)					3262 Btuh	
Doors	Type							Area (sqft)			HTM		Load		
1	Insulated - Exterior							20.0			13.8		276 Btuh		
2	Insulated - Garage							20.0			13.8		276 Btuh		
	Door Total								40 (sqft)					552 Btuh	
Ceilings	Type/Color/Surface					U-Value	R-Value	Area(sqft)			HTM		Load		
1	Vented Attic/Med/Shingle/RB					0.025	38.0/0.0	1933.0			1.12		2159 Btuh		
	Ceiling Total								1933 (sqft)					2159 Btuh	
Floors	Type						R-Value	Size			HTM		Load		
1	Slab On Grade						0.0	1841 (ft-perimeter)			0.0		0 Btuh		
	Floor Total								1841.0 (sqft)					0 Btuh	
	Envelope Subtotal:													8463 Btuh	
Infiltration	Type					Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load	
	Natural					0.12		16569		1		34.0		708 Btuh	
Internal gain						Occupants		Btuh/occupant		Appliance		Load			
						8		X 230		+		1200		3040 Btuh	
	Sensible Envelope Load:													12211 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

352 SW Buttercup Lane
Lake City, FL 32025

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
352 SW Buttercup Lane

3/2/2023

Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.452)	5524 Btuh
	Sensible Load All Zones	17734 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

352 SW Buttercup Lane
Lake City, FL 32025

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
352 SW Buttercup Lane

3/2/2023

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	12211 Btuh
	Sensible Duct Load	5524 Btuh
	Total Sensible Zone Loads	17734 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	17734 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1175 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1427 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	4201 Btuh
	TOTAL GAIN	21936 Btuh

EQUIPMENT

1. Central Unit	#	21936 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