

Residential System Sizing Calculation

Summary

Project Title:
Lot 22 Jewel Lake I

Lake City, FL 32025

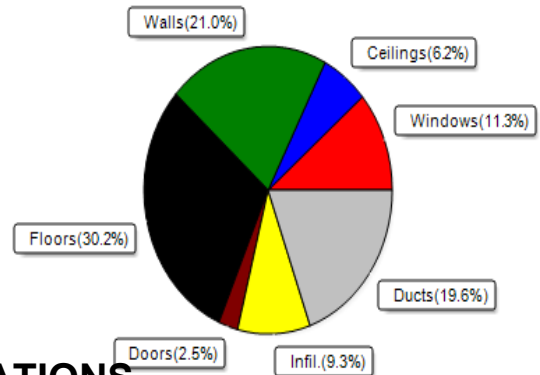
1/29/2022

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	38778 Btuh	Total cooling load calculation	29866 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 38778	Sensible (SHR = 0.70)	85.5 20699
Heat Pump + Auxiliary(0.0kW)	100.0 38778	Latent	157.0 8871
		Total (Electric Heat Pump)	99.0 29571

WINTER CALCULATIONS

Winter Heating Load (for 2570 sqft)

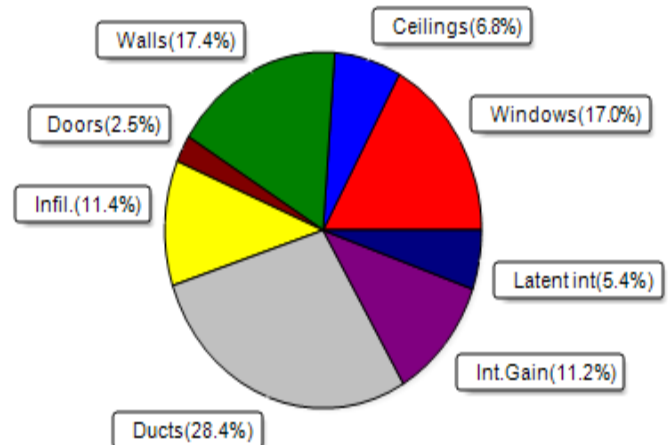
Load component	Load
Window total 304 sqft	4375 Btuh
Wall total 2292 sqft	8138 Btuh
Door total 53 sqft	981 Btuh
Ceiling total 2354 sqft	2390 Btuh
Floor total See detail report	11724 Btuh
Infiltration 82 cfm	3588 Btuh
Duct loss	7582 Btuh
Subtotal	38778 Btuh
Ventilation 0 cfm	0 Btuh
TOTAL HEAT LOSS	38778 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 2570 sqft)

Load component	Load
Window total 304 sqft	5084 Btuh
Wall total 2292 sqft	5188 Btuh
Door total 53 sqft	736 Btuh
Ceiling total 2354 sqft	2031 Btuh
Floor total	0 Btuh
Infiltration 61 cfm	1278 Btuh
Internal gain	3340 Btuh
Duct gain	6559 Btuh
Sens. Ventilation 0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	24217 Btuh
Latent gain(ducts)	1929 Btuh
Latent gain(infiltration)	2121 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1600 Btuh
Total latent gain	5650 Btuh
TOTAL HEAT GAIN	29866 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 1 29 / 2022

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Lake City, FL 32025

Project Title:
Lot 22 Jewel Lake I
Building Type: User

1/29/2022

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 F (TMY3 99%)

Component Loads for Whole House

Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.25	Vinyl	0.36	S	60.0		14.4	864 Btuh
2	2, NFRC 0.25	Vinyl	0.36	S	8.0		14.4	115 Btuh
3	2, NFRC 0.25	Vinyl	0.36	S	45.0		14.4	648 Btuh
4	2, NFRC 0.25	Vinyl	0.36	E	16.0		14.4	230 Btuh
5	2, NFRC 0.25	Vinyl	0.36	E	12.0		14.4	173 Btuh
6	2, NFRC 0.25	Vinyl	0.36	N	12.0		14.4	173 Btuh
7	2, NFRC 0.25	TIM	0.36	N	100.0		14.4	1440 Btuh
8	2, NFRC 0.25	Vinyl	0.36	N	2.3		14.4	34 Btuh
9	2, NFRC 0.25	Vinyl	0.36	W	15.0		14.4	216 Btuh
10	2, NFRC 0.25	Vinyl	0.36	W	3.5		14.4	50 Btuh
11	2, NFRC 0.25	Vinyl	0.36	W	30.0		14.4	432 Btuh
Window Total					303.8(sqft)			4375 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	270		3.55	957 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	54		3.55	192 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	64		3.55	227 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	48		3.55	170 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	171		3.55	607 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	245		3.55	870 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	387		3.55	1374 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	95		3.55	336 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	116		3.55	412 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	80		3.55	282 Btuh
11	Frame - Wood	- Ext	(0.089)	13.0/0.0	72		3.55	256 Btuh
12	Frame - Wood	- Ext	(0.089)	13.0/0.0	111		3.55	392 Btuh
13	Frame - Wood	- Ext	(0.089)	13.0/0.0	45		3.55	160 Btuh
14	Frame - Wood	- Ext	(0.089)	13.0/0.0	161		3.55	570 Btuh
15	Frame - Wood	- Ext	(0.089)	13.0/0.0	138		3.55	490 Btuh
16	Frame - Wood	- Ext	(0.089)	13.0/0.0	105		3.55	374 Btuh
17	Frame - Wood	- Ext	(0.089)	13.0/0.0	132		3.55	469 Btuh
Wall Total					2292(sqft)			8138 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)		20		18.4	368 Btuh
3	Insulated - Exterior, n		(0.460)		13		18.4	245 Btuh
Door Total					53(sqft)			981Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Vented Attic/L/Shing		(0.025)	38.0/0.0	2010		1.0	2040 Btuh
2	Vented Attic/L/Shing		(0.025)	38.0/0.0	344		1.0	350 Btuh
Ceiling Total					2354(sqft)			2390Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Lake City, FL 32025

Project Title:
Lot 22 Jewel Lake I
Building Type: User

1/29/2022

Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	248.4 ft(perim.)	47.2	11724 Btuh
2	Interior	(1.180)	19.0	328.0 sqft	0.0	0 Btuh
	Floor Total			2570 sqft		11724 Btuh
	Envelope Subtotal:					27609 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=
	Natural		0.22	22802	1.00	81.9
						3588 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att)				(DLM of 0.243)	7582 Btuh
All Zones	Sensible Subtotal All Zones					38778 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	38778 Btuh
	Ventilation Sensible Heat Loss	0 Btuh
	Total Heat Loss	38778 Btuh

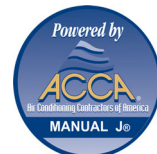
EQUIPMENT

1. Electric Heat Pump	#	38778 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

Project Title:
Lot 22 Jewel Lake I

Lake City, FL 32025

1/29/2022

Reference City: Gainesville, FL

Temperature Difference: 19.0F(TMY3 99%) Humidity difference: 51gr.

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	S		9.5ft.	1.0ft.	60.0	60.0	0.0	12	14	726	Btuh
2	2 NFRC	0.25, 0.36	No	No	S		1.5ft.	1.0ft.	8.0	8.0	0.0	12	14	97	Btuh
3	2 NFRC	0.25, 0.36	No	No	S		1.0ft.	3.0ft.	45.0	24.1	20.9	12	14	585	Btuh
4	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	1.0ft.	16.0	1.0	15.0	12	31	477	Btuh
5	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	1.0ft.	12.0	1.5	10.5	12	31	344	Btuh
6	2 NFRC	0.25, 0.36	No	No	N		11.5f	1.0ft.	12.0	0.0	12.0	12	12	145	Btuh
7	2 NFRC	0.25, 0.36	No	No	N		11.5f	1.0ft.	100.0	0.0	100.0	12	12	1210	Btuh
8	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	2.3	0.0	2.3	12	12	28	Btuh
9	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	15.0	0.7	14.3	12	31	450	Btuh
10	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	3.5	0.7	2.8	12	31	94	Btuh
11	2 NFRC	0.25, 0.36	No	No	W		1.0ft.	2.0ft.	30.0	0.0	30.0	12	31	928	Btuh
	Window Total								304 (sqft)					5084 Btuh	
Walls	Type	U-Value		R-Value		Area(sqft)		HTM		Load					
1	Frame - Wood - Ext		0.09		13.0/0.0		269.5		2.3		610 Btuh				
2	Frame - Wood - Ext		0.09		13.0/0.0		54.0		2.3		122 Btuh				
3	Frame - Wood - Ext		0.09		13.0/0.0		64.0		2.3		145 Btuh				
4	Frame - Wood - Ext		0.09		13.0/0.0		48.0		2.3		109 Btuh				
5	Frame - Wood - Ext		0.09		13.0/0.0		171.0		2.3		387 Btuh				
6	Frame - Wood - Ext		0.09		13.0/0.0		245.0		2.3		555 Btuh				
7	Frame - Wood - Ext		0.09		13.0/0.0		387.0		2.3		876 Btuh				
8	Frame - Wood - Ext		0.09		13.0/0.0		94.7		2.3		214 Btuh				
9	Frame - Wood - Ext		0.09		13.0/0.0		116.2		2.3		263 Btuh				
10	Frame - Wood - Ext		0.09		13.0/0.0		79.5		2.3		180 Btuh				
11	Frame - Wood - Ext		0.09		13.0/0.0		72.0		2.3		163 Btuh				
12	Frame - Wood - Ext		0.09		13.0/0.0		110.5		2.3		250 Btuh				
13	Frame - Wood - Ext		0.09		13.0/0.0		45.0		2.3		102 Btuh				
14	Frame - Wood - Ext		0.09		13.0/0.0		160.5		2.3		363 Btuh				
15	Frame - Wood - Ext		0.09		13.0/0.0		138.0		2.3		312 Btuh				
16	Frame - Wood - Ext		0.09		13.0/0.0		105.3		2.3		238 Btuh				
17	Frame - Wood - Ext		0.09		13.0/0.0		132.0		2.3		299 Btuh				
	Wall Total								2292 (sqft)			5188 Btuh			
Doors	Type	U-Value		R-Value		Area (sqft)		HTM		Load					
1	Insulated - Exterior						20.0		13.8		276 Btuh				
2	Insulated - Exterior						20.0		13.8		276 Btuh				
3	Insulated - Exterior						13.3		13.8		184 Btuh				
	Door Total								53 (sqft)			736 Btuh			
Ceilings	Type/Color/Surface	U-Value		R-Value		Area(sqft)		HTM		Load					
1	Vented Attic/Light/Shingle/RB		0.025		38.0/0.0		2009.7		0.86		1734 Btuh				
2	Vented Attic/Light/Shingle/RB		0.025		38.0/0.0		344.4		0.86		297 Btuh				
	Ceiling Total								2354 (sqft)			2031 Btuh			
Floors	Type	U-Value		R-Value		Size		HTM		Load					
1	Slab On Grade				0.0		2242 (ft-perimeter)		0.0		0 Btuh				
2	Interior				19.0		328 (sqft)		0.0		0 Btuh				
	Floor Total								2570.0 (sqft)			0 Btuh			
	Envelope Subtotal:											13040 Btuh			

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
 Lot 22 Jewel Lake I

Lake City, FL 32025

1/29/2022

Infiltration	Type Natural	Average ACH 0.16	Volume(cuft) 22802	Wall Ratio 1	CFM= 61.4	Load 1278 Btuh
Internal gain		Occupants 8	Btuh/occupant X 230	Appliance +	1500	Load 3340 Btuh
					Sensible Envelope Load:	17658 Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.371)					6559 Btuh
					Sensible Load All Zones	24217 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 22 Jewel Lake I

Lake City, FL 32025

1/29/2022

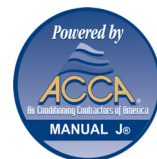
WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	17658 Btuh
	Sensible Duct Load	6559 Btuh
	Total Sensible Zone Loads	24217 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	24217 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	2121 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1929 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	5650 Btuh
	TOTAL GAIN	29866 Btuh

EQUIPMENT

1. Central Unit	#	29571 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