

Residential System Sizing Calculation

Summary

Project Title:
Lot 39 Jewel Lake II

Lake City, FL 32025

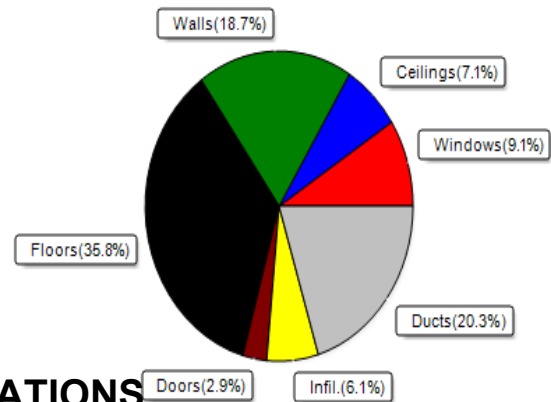
3/10/2022

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	24162 Btuh	Total cooling load calculation	19410 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 24162	Sensible (SHR = 0.70)	85.9 13510
Heat Pump + Auxiliary(0.0kW)	100.0 24162	Latent	157.2 5790
		Total (Electric Heat Pump)	99.4 19300

WINTER CALCULATIONS

Winter Heating Load (for 1607 sqft)

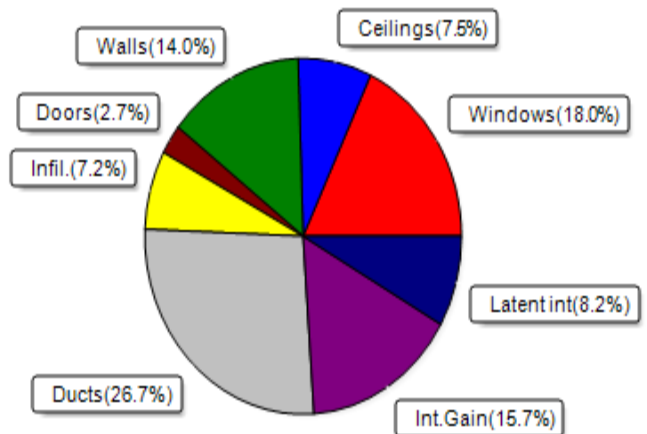
Load component		Load	
Window total	153 sqft	2208	Btuh
Wall total	1273 sqft	4519	Btuh
Door total	38 sqft	695	Btuh
Ceiling total	1687 sqft	1713	Btuh
Floor total	1607 sqft	8653	Btuh
Infiltration	34 cfm	1471	Btuh
Duct loss		4903	Btuh
Subtotal		24162	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		24162	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1607 sqft)

Load component		Load	
Window total	153 sqft	3496	Btuh
Wall total	1273 sqft	2717	Btuh
Door total	38 sqft	521	Btuh
Ceiling total	1687 sqft	1456	Btuh
Floor total		0	Btuh
Infiltration	25 cfm	524	Btuh
Internal gain		3040	Btuh
Duct gain		3973	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		15727	Btuh
Latent gain(ducts)		1214	Btuh
Latent gain(infiltration)		869	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1600	Btuh
Total latent gain		3683	Btuh
TOTAL HEAT GAIN		19410	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 3 / 10 / 2022

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Lake City, FL 32025

Project Title:
Lot 39 Jewel Lake II
Building Type: User

3/10/2022

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	W	30.0		14.4	432 Btuh
2	2, NFRC 0.25	Vinyl	0.36	N	15.0		14.4	216 Btuh
3	2, NFRC 0.25	Vinyl	0.36	E	60.0		14.4	864 Btuh
4	2, NFRC 0.25	Metal	0.36	E	33.3		14.4	480 Btuh
5	2, NFRC 0.25	Vinyl	0.36	S	15.0		14.4	216 Btuh
Window Total					153.3(sqft)			2208 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	91		3.55	324 Btuh
2	Frame - Wood	- Adj	(0.089)	13.0/0.0	126		3.55	448 Btuh
3	Frame - Wood	- Adj	(0.089)	13.0/0.0	157		3.55	559 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	273		3.55	969 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	169		3.55	601 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	64		3.55	227 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	39		3.55	137 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	353		3.55	1253 Btuh
Wall Total					1273(sqft)			4519 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)		18		18.4	327 Btuh
Door Total					38(sqft)			695Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Vented Attic/L/Shing		(0.025)	38.0/0.0	1687		1.0	1713 Btuh
Ceiling Total					1687(sqft)			1713Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	183.3 ft(perim.)		47.2	8653 Btuh
Floor Total					1607 sqft			8653 Btuh
Envelope Subtotal:								17788 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural		0.16	12856	1.00	33.6		1471 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.255)							4903 Btuh
All Zones	Sensible Subtotal All Zones							24162 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Lake City, FL 32025

Project Title:
Lot 39 Jewel Lake II
Building Type: User

3/10/2022

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	24162 Btuh
	Ventilation Sensible Heat Loss	0 Btuh
	Total Heat Loss	24162 Btuh

EQUIPMENT

1. Electric Heat Pump	#	24162 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 39 Jewel Lake II

Lake City, FL 32025

3/10/2022

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	W		1.0ft.	3.0ft.	30.0	0.0	30.0	12	31	928	Btuh	
2	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	15.0	0.0	15.0	12	12	181	Btuh	
3	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	1.0ft.	60.0	2.9	57.1	12	31	1801	Btuh	
4	2 NFRC	0.25, 0.36	No	No	E		9.5ft.	1.0ft.	33.3	33.3	0.0	12	31	403	Btuh	
5	2 NFRC	0.25, 0.36	No	No	S		1.5ft.	1.0ft.	15.0	15.0	0.0	12	14	181	Btuh	
	Window Total								153 (sqft)					3496 Btuh		
Walls	Type						U-Value		R-Value		Area(sqft)		HTM		Load	
									Cav/Sheath							
1	Frame - Wood - Ext						0.09		13.0/0.0		91.3		2.3		207 Btuh	
2	Frame - Wood - Adj						0.09		13.0/0.0		126.2		1.7		213 Btuh	
3	Frame - Wood - Adj						0.09		13.0/0.0		157.3		1.7		265 Btuh	
4	Frame - Wood - Ext						0.09		13.0/0.0		273.0		2.3		618 Btuh	
5	Frame - Wood - Ext						0.09		13.0/0.0		169.3		2.3		383 Btuh	
6	Frame - Wood - Ext						0.09		13.0/0.0		64.0		2.3		145 Btuh	
7	Frame - Wood - Ext						0.09		13.0/0.0		38.7		2.3		88 Btuh	
8	Frame - Wood - Ext						0.09		13.0/0.0		353.0		2.3		799 Btuh	
	Wall Total										1273 (sqft)				2717 Btuh	
Doors	Type								Area (sqft)		HTM		Load			
1	Insulated - Exterior								20.0		13.8		276 Btuh			
2	Insulated - Garage								17.8		13.8		245 Btuh			
	Door Total										38 (sqft)				521 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		1687.0		0.86		1456 Btuh	
	Ceiling Total										1687 (sqft)				1456 Btuh	
Floors	Type								R-Value		Size		HTM		Load	
1	Slab On Grade								0.0		1607 (ft-perimeter)		0.0		0 Btuh	
	Floor Total										1607.0 (sqft)				0 Btuh	
	Envelope Subtotal:													8190 Btuh		
Infiltration	Type						Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load	
	Natural						0.12		12856		1		25.2		524 Btuh	
Internal gain							Occupants		Btuh/occupant		Appliance		Load			
							8		X 230		+		1200		3040 Btuh	
	Sensible Envelope Load:													11754 Btuh		
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.338)													3973 Btuh		
	Sensible Load All Zones													15727 Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 39 Jewel Lake II

Lake City, FL 32025

3/10/2022

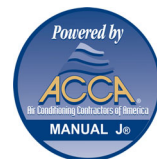
WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	11754 Btuh
	Sensible Duct Load	3973 Btuh
	Total Sensible Zone Loads	15727 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	15727 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	869 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1214 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	3683 Btuh
	TOTAL GAIN	19410 Btuh

EQUIPMENT

1. Central Unit	#	19300 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