

Residential System Sizing Calculation

Summary

Project Title:
Lot 24 Jewel Lake I

Lake City, FL 32025

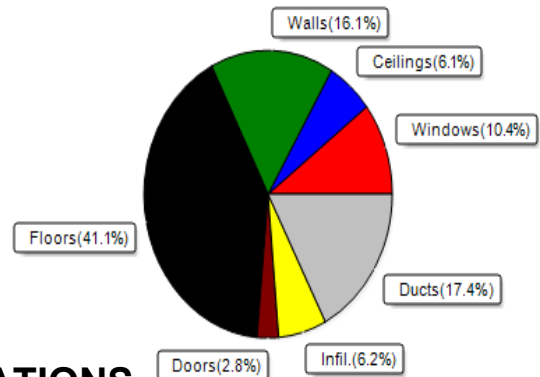
1/28/2022

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	26386 Btuh	Total cooling load calculation	17181 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 26386	Sensible (SHR = 0.70)	86.8 12027
Heat Pump + Auxiliary(0.0kW)	100.0 26386	Latent	155.2 5154
		Total (Electric Heat Pump)	100.0 17181

WINTER CALCULATIONS

Winter Heating Load (for 1504 sqft)

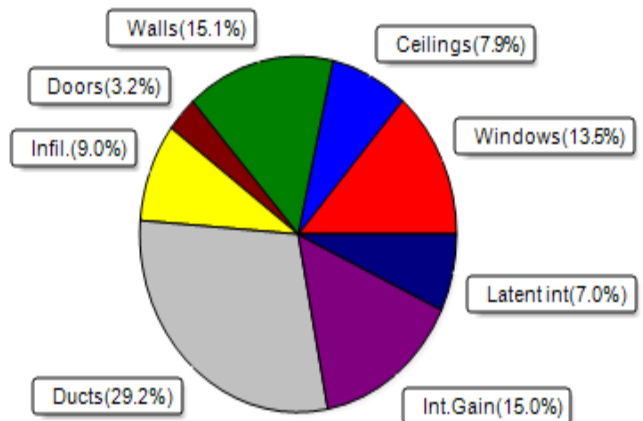
Load component		Load	
Window total	191 sqft	2750	Btuh
Wall total	1194 sqft	4239	Btuh
Door total	40 sqft	736	Btuh
Ceiling total	1579 sqft	1603	Btuh
Floor total	1504 sqft	10847	Btuh
Infiltration	37 cfm	1623	Btuh
Duct loss		4587	Btuh
Subtotal		26386	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		26386	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1504 sqft)

Load component		Load	
Window total	191 sqft	2326	Btuh
Wall total	1194 sqft	2600	Btuh
Door total	40 sqft	552	Btuh
Ceiling total	1579 sqft	1363	Btuh
Floor total		0	Btuh
Infiltration	28 cfm	578	Btuh
Internal gain		2580	Btuh
Duct gain		3860	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		13859	Btuh
Latent gain(ducts)		1162	Btuh
Latent gain(infiltration)		960	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1200	Btuh
Total latent gain		3322	Btuh
TOTAL HEAT GAIN		17181	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY:

DATE: 1 / 28 / 2022

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Lake City, FL 32025

Project Title:
Lot 24 Jewel Lake I
Building Type: User

1/28/2022

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	15.0		14.4	216 Btuh
2	2, NFRC 0.25	Vinyl	0.36	S	9.0		14.4	130 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	30.0		14.4	432 Btuh
5	2, NFRC 0.25	Vinyl	0.36	E	30.0		14.4	432 Btuh
6	2, NFRC 0.25	Vinyl	0.36	N	3.0		14.4	43 Btuh
7	2, NFRC 0.25	Vinyl	0.36	N	45.0		14.4	648 Btuh
8	2, NFRC 0.25	Vinyl	0.36	N	9.0		14.4	130 Btuh
9	2, NFRC 0.25	TIM	0.36	N	20.0		14.4	288 Btuh
Window Total					191.0(sqft)			2750 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	74		3.55	261 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	137		3.55	485 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	45		3.55	160 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	89		3.55	314 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	103		3.55	366 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	215		3.55	762 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	355		3.55	1260 Btuh
8	Frame - Wood	- Adj	(0.089)	13.0/0.0	178		3.55	632 Btuh
Wall Total					1194(sqft)			4239 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	Vented Attic/L/Shing		(0.025)	38.0/0.0	1579		1.0	1603 Btuh
Ceiling Total					1579(sqft)			1603Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	229.8 ft(perim.)		47.2	10847 Btuh
Floor Total					1504 sqft			10847 Btuh
Envelope Subtotal:								20175 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural		0.16	13536	1.00	37.1		1623 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.210)							4587 Btuh
All Zones	Sensible Subtotal All Zones							26386 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Lake City, FL 32025

Project Title:
Lot 24 Jewel Lake I
Building Type: User

1/28/2022

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	26386 Btuh
	Ventilation Sensible Heat Loss	0 Btuh
	Total Heat Loss	26386 Btuh

EQUIPMENT

1. Electric Heat Pump	#	26386 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 24 Jewel Lake I

Lake City, FL 32025

1/28/2022

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		1.0ft.	3.0ft.	15.0	8.0	7.0	12	14	195	Btuh	
2	2 NFRC	0.25, 0.36	No	No	S		1.0ft.	3.0ft.	9.0	8.0	1.0	12	14	111	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		6.5ft.	1.0ft.	30.0	30.0	0.0	12	14	363	Btuh	
5	2 NFRC	0.25, 0.36	No	No	E		7.5ft.	1.0ft.	30.0	30.0	0.0	12	31	363	Btuh	
6	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	3.0	0.0	3.0	12	12	36	Btuh	
7	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	45.0	0.0	45.0	12	12	544	Btuh	
8	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	9.0	0.0	9.0	12	12	109	Btuh	
9	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	20.0	0.0	20.0	12	12	242	Btuh	
	Window Total								191 (sqft)							2326 Btuh
Walls	Type					U-Value	R-Value		Area(sqft)		HTM		Load			
							Cav/Sheath									
1	Frame - Wood - Ext					0.09	13.0/0.0		73.5		2.3		166 Btuh			
2	Frame - Wood - Ext					0.09	13.0/0.0		136.5		2.3		309 Btuh			
3	Frame - Wood - Ext					0.09	13.0/0.0		45.0		2.3		102 Btuh			
4	Frame - Wood - Ext					0.09	13.0/0.0		88.5		2.3		200 Btuh			
5	Frame - Wood - Ext					0.09	13.0/0.0		103.0		2.3		233 Btuh			
6	Frame - Wood - Ext					0.09	13.0/0.0		214.5		2.3		485 Btuh			
7	Frame - Wood - Ext					0.09	13.0/0.0		355.0		2.3		803 Btuh			
8	Frame - Wood - Adj					0.09	13.0/0.0		178.0		1.7		300 Btuh			
	Wall Total								1194 (sqft)							2600 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/Light/Shingle/RB					0.025	38.0/0.0		1579.0		0.86		1363 Btuh			
	Ceiling Total								1579 (sqft)							1363 Btuh
Floors	Type						R-Value		Size		HTM		Load			
1	Slab On Grade						0.0		1504 (ft-perimeter)		0.0		0 Btuh			
	Floor Total								1504.0 (sqft)							0 Btuh
	Envelope Subtotal:														6841 Btuh	
Infiltration	Type					Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load		
	Natural					0.12		13536		1		27.8		578 Btuh		
Internal gain					Occupants		Btuh/occupant		Appliance				Load			
					6		X 230		+		1200		2580 Btuh			
	Sensible Envelope Load:														9999 Btuh	
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic)										(DGM of 0.386)			3860 Btuh		
	Sensible Load All Zones														13859 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 24 Jewel Lake I

Lake City, FL 32025

1/28/2022

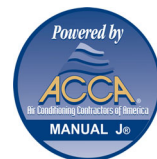
WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	9999 Btuh
	Sensible Duct Load	3860 Btuh
	Total Sensible Zone Loads	13859 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	13859 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	960 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1162 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	3322 Btuh
	TOTAL GAIN	17181 Btuh

EQUIPMENT

1. Central Unit	#	17181 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