

Residential System Sizing Calculation

Summary

N/A

Project Title:

Lot 7 Stonehenge - Model 1534

Lake City, FL 32025

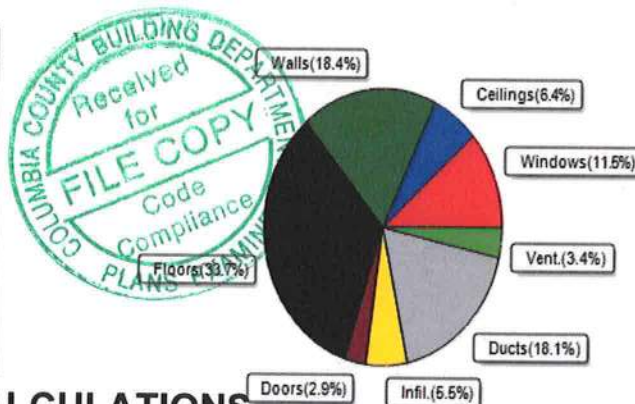
5/24/2021

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	25596 Btuh	Total cooling load calculation	19773 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 25596	Sensible (SHR = 0.70)	88.5 13841
Heat Pump + Auxiliary(0.0kW)	100.0 25596	Latent	143.5 5932
		Total (Electric Heat Pump)	100.0 19773

WINTER CALCULATIONS

Winter Heating Load (for 1534 sqft)

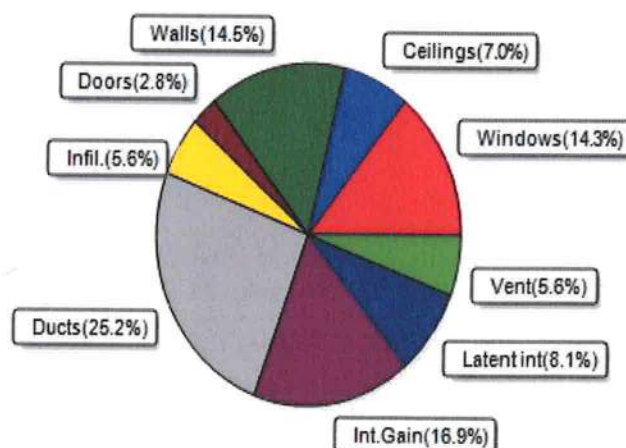
Load component		Load	
Window total	205 sqft	2952	Btuh
Wall total	1330 sqft	4722	Btuh
Door total	40 sqft	736	Btuh
Ceiling total	1611 sqft	1636	Btuh
Floor total	1534 sqft	8638	Btuh
Infiltration	32 cfm	1405	Btuh
Duct loss		4632	Btuh
Subtotal		24720	Btuh
Ventilation	20 cfm	876	Btuh
TOTAL HEAT LOSS		25596	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1534 sqft)

Load component		Load	
Window total	205 sqft	2820	Btuh
Wall total	1330 sqft	2874	Btuh
Door total	40 sqft	552	Btuh
Ceiling total	1611 sqft	1390	Btuh
Floor total		0	Btuh
Infiltration	20 cfm	418	Btuh
Internal gain		3340	Btuh
Duct gain		3828	Btuh
Sens. Ventilation	20 cfm	416	Btuh
Blower Load		0	Btuh
Total sensible gain		15639	Btuh
Latent gain(ducts)		1150	Btuh
Latent gain(infiltration)		694	Btuh
Latent gain(ventilation)		690	Btuh
Latent gain(internal/occupants/other)		1600	Btuh
Total latent gain		4134	Btuh
TOTAL HEAT GAIN		19773	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY:

DATE:

5/24/2021

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

N/A

Lake City, FL 32025

Project Title:
Lot 7 Stonehenge - Model 1534
Building Type: User

5/24/2021

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	E	4.0		14.4	58 Btuh
3	2, NFRC 0.25	Vinyl	0.36	N	15.0		14.4	216 Btuh
4	2, NFRC 0.25	Vinyl	0.36	N	30.0		14.4	432 Btuh
5	2, NFRC 0.25	TIM	0.36	N	20.0		14.4	288 Btuh
6	2, NFRC 0.25	Vinyl	0.36	N	30.0		14.4	432 Btuh
7	2, NFRC 0.25	Vinyl	0.36	N	30.0		14.4	432 Btuh
8	2, NFRC 0.25	Vinyl	0.36	W	16.0		14.4	230 Btuh
Window Total					205.0(sqft)			2952 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	194		3.55	687 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	260		3.55	923 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	102		3.55	362 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	87		3.55	307 Btuh
5	Frame - Wood	- Adj	(0.089)	13.0/0.0	52		3.55	185 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	60		3.55	213 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	84		3.55	298 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	236		3.55	838 Btuh
10	Frame - Wood	- Adj	(0.089)	13.0/0.0	184		3.55	653 Btuh
Wall Total					1330(sqft)			4722 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Garage, 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	1611		1.0	1636 Btuh
Ceiling Total					1611(sqft)			1636Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	183.0 ft(perim.)		47.2	8638 Btuh
Floor Total					1534 sqft			8638 Btuh
Envelope Subtotal:								18683 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio		CFM=	Load
	Natural(Adjusted for ventilation)		0.16	13806	1.00		32.1	1405 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.231)							4632 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

N/A

Lake City, FL 32025

Project Title:
Lot 7 Stonehenge - Model 1534
Building Type: User

5/24/2021

All Zones	Sensible Subtotal All Zones	24720 Btuh
-----------	-----------------------------	------------

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	24720 Btuh 876 Btuh 25596 Btuh
--------------------	--	--------------------------------------

EQUIPMENT

1. Electric Heat Pump	#	25596 Btuh
-----------------------	---	------------

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

N/A

Project Title:

Lot 7 Stonehenge - Model 1534

Lake City, FL 32025

5/24/2021

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		7.5ft.	1.0ft.	60.0	60.0	0.0	12	14	726	Btuh
2	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	1.0ft.	4.0	1.0	3.0	12	31	105	Btuh
3	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	15.0	0.0	15.0	12	12	181	Btuh
4	2 NFRC	0.25, 0.36	No	No	N		9.5ft.	1.0ft.	30.0	0.0	30.0	12	12	363	Btuh
5	2 NFRC	0.25, 0.36	No	No	N		9.5ft.	1.0ft.	20.0	0.0	20.0	12	12	242	Btuh
6	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	30.0	0.0	30.0	12	12	363	Btuh
7	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	30.0	0.0	30.0	12	12	363	Btuh
8	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	16.0	1.0	15.0	12	31	477	Btuh
Window Total									205 (sqft)					2820 Btuh	
Walls	Type	U-Value			R-Value			Area(sqft)			HTM		Load		
					Cav/Sheath										
1	Frame - Wood - Ext				0.09		13.0/0.0			193.5		2.3		438	Btuh
2	Frame - Wood - Ext				0.09		13.0/0.0			260.0		2.3		588	Btuh
3	Frame - Wood - Ext				0.09		13.0/0.0			102.0		2.3		231	Btuh
4	Frame - Wood - Ext				0.09		13.0/0.0			86.5		2.3		196	Btuh
5	Frame - Wood - Adj				0.09		13.0/0.0			52.0		1.7		88	Btuh
6	Frame - Wood - Ext				0.09		13.0/0.0			60.0		2.3		136	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			84.0		2.3		190	Btuh
9	Frame - Wood - Ext				0.09		13.0/0.0			236.0		2.3		534	Btuh
10	Frame - Wood - Adj				0.09		13.0/0.0			184.0		1.7		310	Btuh
Wall Total									1330 (sqft)					2874 Btuh	
Doors	Type							Area (sqft)			HTM		Load		
1	Insulated - Garage									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 AtticLight/Shingle/RB				0.025		38.0/0.0			1611.0		0.86		1390	Btuh
Ceiling Total									1611 (sqft)					1390 Btuh	
Floors	Type				R-Value			Size			HTM		Load		
1	Slab On Grade						0.0			1534 (ft-perimeter)		0.0		0	Btuh
Floor Total									1534.0 (sqft)					0 Btuh	
Envelope Subtotal:														7636 Btuh	
Infiltration	Type	Average ACH			Volume(cuft)			Wall Ratio			CFM=		Load		
	Natural(Adjusted for ventilation)				0.09				13806		1		20.1	418	Btuh
Internal gain	Occupants				Btuh/occupant			Appliance			Load				
					8		X		230		+		1500	3340	Btuh
Sensible Envelope Load:														11395 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

N/A

Lake City, FL 32025

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 7 Stonehenge - Model 1534

5/24/2021

Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.336)	3828 Btuh
	Sensible Load All Zones	15223 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

N/A

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 7 Stonehenge - Model 1534

Lake City, FL 32025

5/24/2021

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	11395 Btuh
	Sensible Duct Load	3828 Btuh
	Total Sensible Zone Loads	15223 Btuh
	Sensible ventilation	416 Btuh
	Blower	0 Btuh
	Total sensible gain	15639 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	694 Btuh
	Latent ventilation gain	690 Btuh
	Latent duct gain	1150 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	4134 Btuh
	TOTAL GAIN	19773 Btuh

EQUIPMENT

1. Central Unit	#	19773 Btuh
-----------------	---	------------

*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