

Residential System Sizing Calculation

Summary

Peterson
4073 NW River Sebastian Lane
Lake City, FL 32055

Project Title:
Peterson Remodel_Addition

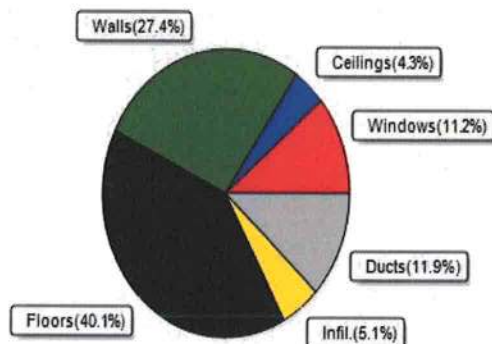


Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(54gr)			
Winter design temperature(TMY3 99%)	30 F	Summer design temperature(TMY3 99%)	94 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	40 F	Summer temperature difference	19 F
Total heating load calculation	4648 Btuh	Total cooling load calculation	4280 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 4648	Sensible (SHR = 0.70)	81.5 2940
Heat Pump + Auxiliary(0.0kW)	100.0 4648	Latent	187.1 1260
		Total (Electric Heat Pump)	98.1 4200

WINTER CALCULATIONS

Winter Heating Load (for 188 sqft)

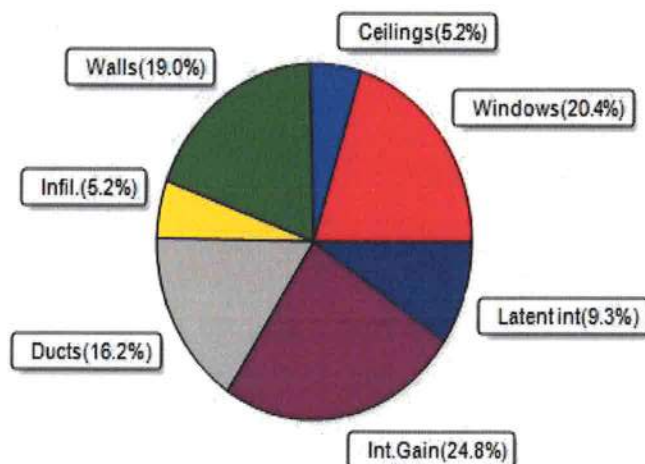
Load component		Load	
Window total	36 sqft	518	Btuh
Wall total	359 sqft	1275	Btuh
Door total	0 sqft	0	Btuh
Ceiling total	197 sqft	200	Btuh
Floor total	188 sqft	1864	Btuh
Infiltration	5 cfm	235	Btuh
Duct loss		555	Btuh
Subtotal		4648	Btuh
Ventilation Ex:0 cfm; Sup:0 cfm		0	Btuh
TOTAL HEAT LOSS		4648	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 188 sqft)

Load component		Load	
Window total	36 sqft	871	Btuh
Wall total	359 sqft	813	Btuh
Door total	0 sqft	0	Btuh
Ceiling total	197 sqft	220	Btuh
Floor total		0	Btuh
Infiltration	4 cfm	84	Btuh
Internal gain		1060	Btuh
Duct gain		559	Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm		0	Btuh
Blower Load		0	Btuh
Total sensible gain		3607	Btuh
Latent gain(ducts)		134	Btuh
Latent gain(infiltration)		139	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		400	Btuh
Total latent gain		673	Btuh
TOTAL HEAT GAIN		4280	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 3/28/2023

Will C. [Signature]

Residential Load - Whole House Component Details

Peterson
4073 NW River Sebastian Lane
Lake City, FL 32055

Project Title:
Peterson Remodel_Addition
Building Type: User

3/28/2023

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	18.0		14.4	259 Btuh
2	2, NFRC 0.25	Vinyl 0.36	E	18.0		14.4	259 Btuh
	Window Total 36.0(sqft)						518 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	62	3.55	220 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	217	3.55	770 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	80	3.55	284 Btuh
	Wall Total 359(sqft)						1275 Btuh
Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load	
1	Flat ceil/M/Shing	(0.025)	38.0/0.0	197	1.0	200 Btuh	
	Ceiling Total 197(sqft)						200Btuh
Floors	Type	Ueff.	R-Value	Size X	HTM=	Load	
1	Slab On Grade	(1.180)	0.0	39.5 ft(perim.)	47.2	1864 Btuh	
	Floor Total 188 sqft						1864 Btuh
	Envelope Subtotal:						3858 Btuh
Infiltration	Type	Wholehouse ACH	Volume(cuft)	Wall Ratio	CFM=	Load	
	Natural	0.17	1880	1.00	5.4	235 Btuh	
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.136)					555 Btuh	
All Zones	Sensible Subtotal All Zones						4648 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	4648 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	4648 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Peterson
4073 NW River Sebastian Lane
Lake City, FL 32055

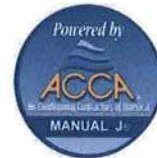
Project Title:
Peterson Remodel Addition
Building Type: User

3/28/2023

EQUIPMENT

1. Electric Heat Pump	#	4648 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

Peterson
4073 NW River Sebastian Lane
Lake City, FL 32055

Project Title:
Peterson Remodel_Addition

3/28/2023

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		1.5ft.	1.0ft.	18.0	0.0	18.0	12	12	218 Btuh	
2	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	1.0ft.	18.0	0.7	17.3	12	31	543 Btuh	
	Excursion													110 Btuh	
	Window Total								36 (sqft)					871 Btuh	
Walls	Type						U-Value		R-Value		Area(sqft)		HTM		Load
									Cav/Sheath						
1	Frame - Wood - Ext						0.09		13.0/0.0		62.0		2.3		140 Btuh
2	Frame - Wood - Ext						0.09		13.0/0.0		217.0		2.3		491 Btuh
3	Frame - Wood - Ext						0.09		13.0/0.0		80.0		2.3		181 Btuh
	Wall Total										359 (sqft)				813 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		197.4		1.12		220 Btuh
	Ceiling Total										197 (sqft)				220 Btuh
Floors	Type						R-Value		Size		HTM		Load		
1	Slab On Grade						0.0		188 (ft-perimeter)		0.0		0 Btuh		
	Floor Total								188.0 (sqft)				0 Btuh		
	Envelope Subtotal:													1904 Btuh	
Infiltration	Type	Average ACH					Volume(cuft)		Wall Ratio		CFM=		Load		
	Natural	0.13					1880		1		4.0		84 Btuh		
Internal gain	Occupants					Btuh/occupant		Appliance		Load					
	2					X 230		+		600		1060 Btuh			
	Sensible Envelope Load:													3048 Btuh	
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.183)													559 Btuh	
	Sensible Load All Zones													3607 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Peterson
4073 NW River Sebastian Lane
Lake City, FL 32055

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Peterson Remodel_Addition

3/28/2023

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	3048 Btuh
	Sensible Duct Load	559 Btuh
	Total Sensible Zone Loads	3607 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	3607 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	139 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	134 Btuh
	Latent occupant gain (2.0 people @ 200 Btuh per person)	400 Btuh
	Latent other gain	0 Btuh
	Latent total gain	673 Btuh
	TOTAL GAIN	4280 Btuh

EQUIPMENT

1. Central Unit	#	4200 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

Envelope Leakage Test Report (Blower Door Test)

Residential Prescriptive, Performance or ERI Method Compliance

2020 Florida Building Code, Energy Conservation, 7th Edition

Jurisdiction:	Permit #:
Job Information	
Builder: Seth Heitzman Construction Community: Lot: NA	
Address: 4073 NW River Sebastian Lane	
City: Lake City	State: FL Zip: 32055
Air Leakage Test Results <i>Passing results must meet either the Performance, Prescriptive, or ERI Method</i>	
<input type="radio"/> PRESCRIPTIVE METHOD -The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 7 air changes per hour at a pressure of 0.2 inch w.g. (50 Pascals) in Climate Zones 1 and 2.	
<input checked="" type="radio"/> PERFORMANCE or ERI METHOD -The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding the selected ACH(50) value, as shown on Form R405-2020 (Performance) or R406-2020 (ERI), section labeled as infiltration, sub-section ACH50. ACH(50) specified on Form R405-2020-Energy Calc (Performance) or R406-2020 (ERI): 5.000	
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 60%;"> $\frac{\text{CFM}(50)}{\text{Building Volume}} \times 60 \div \frac{1880}{\text{ACH}(50)} =$ <div style="border: 1px solid black; width: 40px; height: 20px; margin: 5px auto; display: flex; align-items: center; justify-content: center;"> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> PASS </div> <p><input type="checkbox"/> When ACH(50) is less than 3, Mechanical Ventilation installation must be verified by building department.</p> </div> <div style="width: 35%;"> Method for calculating building volume: <input type="radio"/> Retrieved from architectural plans <input checked="" type="radio"/> Code software calculated <input type="radio"/> Field measured and calculated </div> </div>	
<p>R402.4.1.2 Testing. Testing shall be conducted in accordance with ANSI/RESNET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7) <i>Florida Statutes</i> or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i) or an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.</p> <p>During testing:</p> <ol style="list-style-type: none"> 1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures. 2. Dampers including exhaust, intake, makeup air, back draft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures. 3. Interior doors, if installed at the time of the test, shall be open. 4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed. 5. Heating and cooling systems, if installed at the time of the test, shall be turned off. 6. Supply and return registers, if installed at the time of the test, shall be fully open. 	
Testing Company	
Company Name: _____ Phone: _____ I hereby verify that the above Air Leakage results are in accordance with the 2020 7th Edition Florida Building Code Energy Conservation requirements according to the compliance method selected above.	
Signature of Tester: _____ Date of Test: _____	
Printed Name of Tester: _____	
License/Certification #: _____ Issuing Authority: _____	