FORM R405-2020

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	176 SW Kimberly Lane	Builder Name:	Rhett Smithey
Street:	176 SW Kimberly Lane	Permit Office:	Columbia County
City, State, Zip:	Lake City, FL, 32025	Permit Number:	
Owner:	N/A	Jurisdiction:	
Design Location:	FL, Gainesville	County:	Columbia(Florida Climate Zone 2)

1. New construction or existing	New (From Plans)
2. Single family or multiple family	Detached
3. Number of units, if multiple family	1
4. Number of Bedrooms	3
5. Is this a worst case?	No
6. Conditioned floor area above grade (ft²)	1895
Conditioned floor area below grade (ft²)	0

7. Windows(215.0 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0.36	215.00 ft²
SHGC:	SHGC=0.25	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		3.267 ft
Area Weighted Average SHGC:		0.250

8. Skylights	Description	Area
U-Factor:(AVG)	N/A	N/A ft²
SHGC(AVG):	N/A	

9. Floor Types	Insulation	Area
a. Slab-On-Grade Edge Insulation	R= 0.0	1895.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

10. Wall Types(1758.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	1437.00 ft²
b. Frame - Wood, Adjacent	R=13.0	321.00 ft²
c. N/A		
d. N/A		

11. Ceiling Types(1989.8 sqft.)	Insulation	Area
a. Flat ceiling under att (Vented)	R=38.0	1989.80 ft²
b. N/A		
c. N/A		

12. Roof(Comp. Shingles, Vented)	Deck R=0.0	2278 ft²

13. Ducts, location & insulation level	R	ft²
a. Sup: Attic, Ret: Attic, AH: Main	6	474
b.		
c.		

14. Cooling Systems	kBtu/hr	Efficiency
a. Central Unit	23.5	SEER2:15.00

15. Heating Systems	kBtu/hr	Efficiency
a. Electric Heat Pump	28.1	HSPF2:8.20

16. Hot Water Systems	
a. Electric	Cap: 40 gallons
	EF: 0.920
b. Conservation features	
	None
17. Credits	CV, Pstat

Glass/Floor Area: 0.113

Total Proposed Modified Loads: 43.68

Total Baseline Loads: 47.69

PASS

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code.

PREPARED BY: _____

DATE: 7 / 25 / 2023

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: _____

DATE: _____

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

BUILDING OFFICIAL: _____

DATE: _____

- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.3.2.1.

- Default duct leakage does not require a Duct Leakage Test Report.

- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires a PERFORMANCE envelope leakage test report with envelope leakage no greater than 5.00 ACH50 (R402.4.1.2).

FORM R405-2020

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	176 SW Kimberly Lane			Address type:	Street Address
Building Type:	User	Bedrooms:	3	Lot #:	---
Owner:	N/A	Conditioned Area:	1895	Block/SubDivision:	---
Builder Home ID:		Total Stories:	1	PlatBook:	---
Builder Name:	Rhett Smithey	Worst Case:	No	Street:	176 SW Kimberly Lane
Permit Office:	Columbia County	Rotate Angle:	0	County:	Columbia
Jurisdiction:		Cross Ventilation:	Yes	City, State, Zip:	Lake City,
Family Type:	Detached	Whole House Fan:	No		FL, 32025
New/Existing:	New (From Plans)	Terrain:	Suburban		
Year Construct:	2023	Shielding:	Suburban		
Comment:					

CLIMATE

√	Design Location	Tmy Site	Design Temp 97.5%	Design Temp 2.5%	Int Design Temp Winter	Int Design Temp Summer	Heating Degree Days	Design Moisture	Daily temp Range
___	FL, Gainesville	FL_GAINESVILLE_REGIONA	32	92	70	75	1305.5	51	Medium

BLOCKS

√	Number	Name	Area	Volume
___	1	Block1	1895	17055 cu ft

SPACES

√	Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Finished	Cooled	Heated
___	1	Main	1895	17055	Yes	6	3	Yes	Yes	Yes

FLOORS (Total Exposed Area = 1895 sq.ft.)

√	#	Floor Type	Space	Exposed Perim	Perimeter R-Value	Area	U-Factor	Joist R-Value	Tile	Wood	Carpet
___	1	Slab-On-Grade Edge Ins	Main	195.33	0	1895 ft	0.304	---	0.00	0.00	1.00

ROOF

√	#	Type	Materials	Roof Area	Gable Area	Roof Color	Rad Barr	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
___	1	Hip	Composition shingles	2278 ft²	0 ft²	Medium	Y	0.96	No	0.9	No	0	33.69

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
___	1	Full attic	Vented	300	1895 ft²	Y	N

CEILING (Total Exposed Area = 1990 sq.ft.)

√	#	Ceiling Type	Space	R-Value	Ins. Type	Area	U-Factor	Framing Frac.	Truss Type
___	1	Flat ceiling under attic(Vented)	Main	38.0	Double Batt	1989.8ft²	0.024	0.11	Wood

FORM R405-2020

INPUT SUMMARY CHECKLIST REPORT

WALLS (Total Exposed Area = 1758 sq.ft.)

√	#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area sq.ft.	U-Factor	Sheath R-Value	Frm. Frac.	Solar Absor.	Below Grade
___	1	N	Exterior	Frame - Wood	Main	13.0	22.0	8	9.0	0	204.0	0.084		0.23	0.75	0 %
___	2	E	Exterior	Frame - Wood	Main	13.0	38.0	0	9.0	0	342.0	0.084		0.23	0.75	0 %
___	3	S	Exterior	Frame - Wood	Main	13.0	10.0	0	9.0	0	90.0	0.084		0.23	0.75	0 %
___	4	E	Exterior	Frame - Wood	Main	13.0	16.0	0	9.0	0	144.0	0.084		0.23	0.75	0 %
___	5	S	Exterior	Frame - Wood	Main	13.0	33.0	8	9.0	0	303.0	0.084		0.23	0.75	0 %
___	6	W	Exterior	Frame - Wood	Main	13.0	39.0	4	9.0	0	354.0	0.084		0.23	0.75	0 %
___	7	N	Garage	Frame - Wood	Main	13.0	21.0	0	9.0	0	189.0	0.084		0.23	0.75	0 %
___	8	W	Garage	Frame - Wood	Main	13.0	14.0	8	9.0	0	132.0	0.084		0.23	0.75	0 %

DOORS (Total Exposed Area = 40 sq.ft.)

√	#	Ornt	Adjacent To	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
___	1	N	Exterior	Insulated	Main	None	0.46	3.00	0	6.00	8	20.0ft²
___	2	N	Garage	Insulated	Main	None	0.46	3.00	0	6.00	8	20.0ft²

WINDOWS (Total Exposed Area = 215 sq.ft.)

√	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Storm	Total Area (ft²)	Same Units	Width (ft)	Height (ft)	--Overhang-- Depth (ft)	Sep. (ft)	Interior Shade	Screen
___	1	N	1	Vinyl	Low-E Double	Y	0.36	0.25	N	N	30.0	2	3.00	5.00	7.5	1.0	None	None
___	2	E	2	Vinyl	Low-E Double	Y	0.36	0.25	N	N	75.0	5	3.00	5.00	1.5	1.0	None	None
___	3	S	3	TIM	Low-E Double	Y	0.36	0.25	N	N	40.0	2	3.00	6.67	6.5	1.0	None	None
___	4	S	5	Vinyl	Low-E Double	Y	0.36	0.25	N	N	30.0	2	3.00	5.00	1.5	1.0	None	None
___	5	S	5	Vinyl	Low-E Double	Y	0.36	0.25	N	N	4.0	1	4.00	1.00	1.5	1.0	None	None
___	6	W	6	Vinyl	Low-E Double	Y	0.36	0.25	N	N	6.0	1	2.00	3.00	1.5	1.0	None	None
___	7	W	6	Vinyl	Low-E Double	Y	0.36	0.25	N	N	30.0	2	3.00	5.00	1.5	1.0	None	None

INFILTRATION

√	#	Scope	Method	SLA	CFM50	ELA	EqLA	ACH	ACH50	Space(s)	Infiltration Test Volume
___	1	Wholehouse	Proposed ACH(50)	0.00029	1421	77.97	146.39	0.1027	5.0	All	17055 cu ft

GARAGE

√	#	Floor Area	Roof Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
___	1	525 ft²	525 ft²	56 ft	9 ft	1

MASS

√	#	Mass Type	Area	Thickness	Furniture Fraction	Space
___	1	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Main

HEATING SYSTEM

√	#	System Type	Subtype/Speed	AHRI #	Efficiency	Capacity kBtu/hr	----Geothermal HeatPump---- Entry	Power	Volt	Current	Ducts	Block
___	1	Electric Heat Pump	None/Single		HSPF2: 8.20	28.1		0.00	0.00	0.00	sys#1	1

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INPUT SUMMARY CHECKLIST REPORT

COOLING SYSTEM

✓	#	System Type	Subtype/Speed	AHRI #	Efficiency	Capacity kBtu/hr	Air Flow cfm	SHR	Duct	Block
___	1	Central Unit	None/Single		SEER2:15.0	23.5	690	0.70	sys#1	1

HOT WATER SYSTEM

✓	#	System Type	Subtype	Location	EF(UEF)	Cap	Use	SetPnt	Fixture Flow	Pipe Ins.	Pipe length
___	1	Electric	None	Garage	0.92 (0.92)	40.00 gal	40 gal	120 deg	Standard	None	12

		Recirculation System	Recirc Control Type	Loop length	Branch length	Pump power	DWHR	Facilities Connected	Equal Flow	DWHR Eff	Other Credits
___	1	No		NA	NA	NA	No	NA	NA	NA	None

DUCTS

✓	Duct #	Supply Location	Supply R-Value	Supply Area	Return Location	Return R-Value	Return Area	Leakage Type	Air Handler	CFM 25 TOT	CFM 25 OUT	QN	RLF	HVAC # Heat	HVAC # Cool
___	1	Attic	6.0	474 ft²	Attic	6.0	95 ft²	Default Leakage	Main	(Default)	(Default)			1	1

TEMPERATURES

Programable Thermostat: Y Ceiling Fans: N

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cooling	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[X]	[X]	[ ]	[ ]	[ ]
Heating	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]
Venting	[ ]	[ ]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[ ]

Thermostat Schedule: HERS 2006 Reference

✓	Schedule Type		Hours 1	2	3	4	5	6	7	8	9	10	11	12
___	Cooling (WD)	AM	78	78	78	78	78	78	78	78	80	80	80	80
		PM	80	80	78	78	78	78	78	78	78	78	78	78
___	Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78
		PM	78	78	78	78	78	78	78	78	78	78	78	78
___	Heating (WD)	AM	66	66	66	66	66	68	68	68	68	68	68	68
		PM	68	68	68	68	68	68	68	68	68	68	66	66
___	Heating (WEH)	AM	66	66	66	66	66	68	68	68	68	68	68	68
		PM	68	68	68	68	68	68	68	68	68	68	66	66

FORM R405-2020

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 92

The lower the EnergyPerformance Index, the more efficient the home.

176 SW Kimberly Lane,Lake City,FL,32025

1. New construction or existing		New (From Plans)
2. Single family or multiple family		Detached
3. Number of units, if multiple family		1
4. Number of Bedrooms		3
5. Is this a worst case?		No
6. Conditioned floor area above grade (ft²)		1895
Conditioned floor area below grade (ft²)		0
7. Windows**	Description	Area
a. U-Factor:	Dbl, U=0.36	215.00 ft²
SHGC:	SHGC=0.25	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		3.267 ft
Area Weighted Average SHGC:		0.250
8. Skylights	Description	Area
U-Factor:(AVG)	N/A	N/A ft²
SHGC(AVG):	N/A	

9. Floor Types	Insulation	Area
a. Slab-On-Grade Edge Insulation	R= 0.0	1895.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

10. Wall Types(1758.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	1437.00 ft²
b. Frame - Wood, Adjacent	R=13.0	321.00 ft²
c. N/A		
d. N/A		

11. Ceiling Types(1989.8 sqft.)	Insulation	Area
a. Flat ceiling under att (Vented)	R=38.0	1989.80 ft²
b. N/A		
c. N/A		

12. Roof(Comp. Shingles, Vented)	Deck R=0.0	2278 ft²

13. Ducts, location & insulation level	R	ft²
a. Sup: Attic, Ret: Attic, AH: Main	6	474
b.		
c.		

14. Cooling Systems	kBtu/hr	Efficiency
a. Central Unit	23.5	SEER2:15.00

15. Heating Systems	kBtu/hr	Efficiency
a. Electric Heat Pump	28.1	HSPF2:8.20

16. Hot Water Systems	
a. Electric	Cap: 40 gallons
	EF: 0.920
b. Conservation features	
	None
17. Credits	CV, Pstat

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature: _____ Date: _____

Address of New Home: 176 SW Kimberly Lane City/FL Zip: Lake City,FL,32025

*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida Energy Rating. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

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: Rhett Smithey Community: Lot: NA

Address: 176 SW Kimberly Lane

City: Lake City State: FL Zip: 32025

Air Leakage Test Results *Passing results must meet either the Performance, Prescriptive, or ERI Method*

○ **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.

● **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

_____ x 60 ÷ 17055 = _____
CFM(50) Building Volume ACH(50)

☐ **PASS**

☐ When ACH(50) is less than 3, Mechanical Ventilation installation must be verified by building department.

Method for calculating building volume:

○ Retrieved from architectural plans

● Code software calculated

○ Field measured and calculated

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), *Florida Statues*, 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.*

During testing:
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: _____

Residential System Sizing Calculation

Summary

N/A
176 SW Kimberly Lane
Lake City, FL 32025

Project Title:
176 SW Kimberly Lane

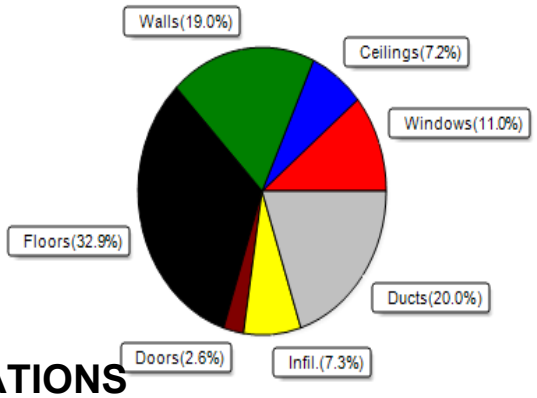
7/25/2023

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	**28061**	**Btuh**	**Total cooling load calculation**	**23457**	**Btuh**
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	100.0	28061	Sensible (SHR = 0.70)	83.8	16420
Heat Pump + Auxiliary(0.0kW)	100.0	28061	Latent	181.7	7037
			Total (Electric Heat Pump)	100.0	23457

WINTER CALCULATIONS

Winter Heating Load (for 1895 sqft)

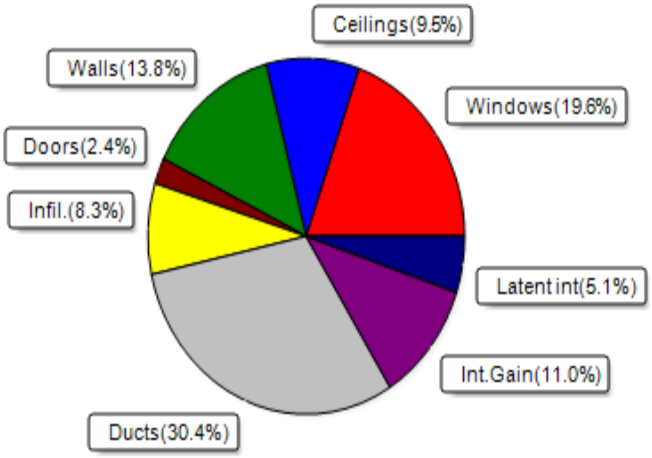
Load component			Load	
Window total	215	sqft	3096	Btuh
Wall total	1503	sqft	5336	Btuh
Door total	40	sqft	736	Btuh
Ceiling total	1990	sqft	2020	Btuh
Floor total	1895	sqft	9220	Btuh
Infiltration	47	cfm	2045	Btuh
Duct loss			5608	Btuh
Subtotal			**28061**	**Btuh**
Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
TOTAL HEAT LOSS			**28061**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 1895 sqft)

Load component			Load	
Window total	215	sqft	4598	Btuh
Wall total	1503	sqft	3228	Btuh
Door total	40	sqft	552	Btuh
Ceiling total	1990	sqft	2222	Btuh
Floor total			0	Btuh
Infiltration	35	cfm	729	Btuh
Internal gain			2580	Btuh
Duct gain			5674	Btuh
Sens.Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
Blower Load			0	Btuh
Total sensible gain			**19584**	**Btuh**
Latent gain(ducts)			1465	Btuh
Latent gain(infiltration)			1209	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			1200	Btuh
Total latent gain			**3874**	**Btuh**
TOTAL HEAT GAIN			**23457**	**Btuh**



Powered by ACCA MANUAL J8 8th Edition

EnergyGauge® System Sizing
PREPARED BY: _____
DATE: 7 / 25 / 2023

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

N/A
176 SW Kimberly Lane
Lake City, FL 32025

Project Title:
176 SW Kimberly Lane
Building Type: User

7/25/2023

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	30.0	14.4	432 Btuh
2	2, NFRC 0.25	Vinyl	0.36	E	75.0	14.4	1080 Btuh
3	2, NFRC 0.25	TIM	0.36	S	40.0	14.4	576 Btuh
4	2, NFRC 0.25	Vinyl	0.36	S	30.0	14.4	432 Btuh
5	2, NFRC 0.25	Vinyl	0.36	S	4.0	14.4	58 Btuh
6	2, NFRC 0.25	Vinyl	0.36	W	6.0	14.4	86 Btuh
7	2, NFRC 0.25	Vinyl	0.36	W	30.0	14.4	432 Btuh
	Window Total				215.0(sqft)		3096 Btuh

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	154	3.55	547 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	267	3.55	948 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	50	3.55	178 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	144	3.55	511 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	269	3.55	955 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	318	3.55	1129 Btuh
7	Frame - Wood	- Adj	(0.089)	13.0/0.0	169	3.55	600 Btuh
8	Frame - Wood	- Adj	(0.089)	13.0/0.0	132	3.55	469 Btuh
	Wall Total				1503(sqft)		5336 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	Flat ceil/M/Shing	(0.025)	38.0/0.0	1990	1.0	2020 Btuh
	Ceiling Total			1990(sqft)		2020Btuh

Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	195.3 ft(perim.)	47.2	9220 Btuh
	Floor Total			1895 sqft		9220 Btuh

	Envelope Subtotal:	20408 Btuh

Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural		0.16	17055	1.00	46.7	2045 Btuh

Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.250)	5608 Btuh
All Zones	**Sensible Subtotal All Zones**	**28061 Btuh**

Manual J Winter Calculations

Residential Load - Component Details (continued)

N/A
176 SW Kimberly Lane
Lake City, FL 32025

Project Title:
176 SW Kimberly Lane
Building Type: User

7/25/2023

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	28061 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	28061 Btuh

EQUIPMENT

1. Electric Heat Pump	#	28061 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
176 SW Kimberly Lane
Lake City, FL 32025

Project Title:
176 SW Kimberly Lane

7/25/2023

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

	Type*					Overhang		Window Area(sqft)			HTM		Load
Window	Panes	SHGC	U	InSh	IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded	
1	2 NFRC	0.25, 0.36		No	No	N	7.5ft.	1.0ft.	30.0	0.0	30.0	12	12	363 Btuh
2	2 NFRC	0.25, 0.36		No	No	E	1.5ft.	1.0ft.	75.0	3.7	71.3	12	31	2251 Btuh
3	2 NFRC	0.25, 0.36		No	No	S	6.5ft.	1.0ft.	40.0	40.0	0.0	12	14	484 Btuh
4	2 NFRC	0.25, 0.36		No	No	S	1.5ft.	1.0ft.	30.0	30.0	0.0	12	14	363 Btuh
5	2 NFRC	0.25, 0.36		No	No	S	1.5ft.	1.0ft.	4.0	4.0	0.0	12	14	48 Btuh
6	2 NFRC	0.25, 0.36		No	No	W	1.5ft.	1.0ft.	6.0	0.5	5.5	12	31	176 Btuh
7	2 NFRC	0.25, 0.36		No	No	W	1.5ft.	1.0ft.	30.0	1.5	28.5	12	31	901 Btuh
	Excursion													12 Btuh
	Window Total								215 (sqft)					4598 Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load
1	Frame - Wood - Ext	0.09	13.0/0.0	154.0	2.3	349 Btuh
2	Frame - Wood - Ext	0.09	13.0/0.0	267.0	2.3	604 Btuh
3	Frame - Wood - Ext	0.09	13.0/0.0	50.0	2.3	113 Btuh
4	Frame - Wood - Ext	0.09	13.0/0.0	144.0	2.3	326 Btuh
5	Frame - Wood - Ext	0.09	13.0/0.0	269.0	2.3	609 Btuh
6	Frame - Wood - Ext	0.09	13.0/0.0	318.0	2.3	720 Btuh
7	Frame - Wood - Adj	0.09	13.0/0.0	169.0	1.7	285 Btuh
8	Frame - Wood - Adj	0.09	13.0/0.0	132.0	1.7	223 Btuh
	Wall Total			1503 (sqft)		3228 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/Med/Shingle/RB	0.025	38.0/0.0	1989.8	1.12	2222 Btuh
	Ceiling Total			1990 (sqft)		2222 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	1895 (ft-perimeter)	0.0	0 Btuh
	Floor Total		1895.0 (sqft)		0 Btuh

	Envelope Subtotal:	10601 Btuh

Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.12	17055	1	35.0	729 Btuh
Internal gain		Occupants	Btuh/occupant		Appliance	Load
		6	X 230	+	1200	2580 Btuh
				Sensible Envelope Load:		13909 Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic)			(DGM of 0.408)		5674 Btuh
				Sensible Load All Zones		**19584 Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

N/A
176 SW Kimberly Lane
Lake City, FL 32025

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
176 SW Kimberly Lane

7/25/2023

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	**Sensible Envelope Load All Zones**	**13909**	**Btuh**
	Sensible Duct Load	5674	Btuh
	Total Sensible Zone Loads	**19584**	**Btuh**
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0	Btuh
	Blower	0	Btuh
	Total sensible gain	**19584**	**Btuh**
	Latent infiltration gain (for 51 gr. humidity difference)	1209	Btuh
	Latent ventilation gain	0	Btuh
	Latent duct gain	1465	Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200	Btuh
	Latent other gain	0	Btuh
	Latent total gain	**3874**	**Btuh**
	TOTAL GAIN	**23457**	**Btuh**

EQUIPMENT

1. Central Unit	#	23457 Btuh

*Key: Window types (Panes - 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