FORM R405-2017

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	Lot 3 Forest Country	Builder Name:	
Street:		Permit Office:	Columbia County
City, State, Zip:	Lake City , FL , 32025	Permit Number:	
Owner:		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	Single-family
3. Number of units, if multiple family	1
4. Number of Bedrooms	4
5. Is this a worst case?	No
6. Conditioned floor area above grade (ft²)	2067
Conditioned floor area below grade (ft²)	0

7. Windows (180.0 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0.36	180.00 ft²
SHGC:	SHGC=0.25	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
d. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		4.944 ft.
Area Weighted Average SHGC:		0.250

8. Floor Types (2067.0 sqft.)	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	2067.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

9. Wall Types (1893.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	1689.00 ft²
b. Frame - Wood, Adjacent	R=13.0	204.00 ft²
c. N/A	R=	ft²
d. N/A	R=	ft²

10. Ceiling Types (2170.0 sqft.)	Insulation	Area
a. Under Attic (Vented)	R=38.0	2170.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

11. Ducts	R	ft²
a. Sup: Attic, Ret: Attic, AH: Garage	6	516.75

12. Cooling systems	kBtu/hr	Efficiency
a. Central Unit	22.9	SEER:14.00

13. Heating systems	kBtu/hr	Efficiency
a. Electric Heat Pump	31.8	HSPF:8.20

14. Hot water systems	
a. Electric	Cap: 50 gallons
	EF: 0.920
b. Conservation features	
None	
15. Credits	CV, Pstat

Glass/Floor Area: 0.087

Total Proposed Modified Loads: 52.18

Total Baseline Loads: 53.36

PASS

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

PREPARED BY: _____

DATE: _____

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.

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

FORM R405-2017

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	Lot 3 Forest Country	Bedrooms:	4	Address Type:	Lot Information
Building Type:	User	Conditioned Area:	2067	Lot #	3
Owner Name:		Total Stories:	1	Block/Subdivision:	Forest Country
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:		Rotate Angle:	0	Street:	
Permit Office:	Columbia County	Cross Ventilation:	Yes	County:	Columbia
Jurisdiction:		Whole House Fan:	No	City, State, Zip:	Lake City , FL , 32025
Family Type:	Single-family				
New/Existing:	New (From Plans)				
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_REGI	32	92	70	75	1305.5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	2067	18603

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	2067	18603	Yes	8	4	1	Yes	Yes	Yes

FLOORS

√	#	Floor Type	Space	Perimeter	R-Value	Area		Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulation	Main	248 ft	0	2067 ft²	----	0	0	1

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	2485 ft²	0 ft²	Medium	Y	0.96	No	0.9	No	0	33.7

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	300	2067 ft²	Y	N

CEILING

√	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
_____	1	Under Attic (Vented)	Main	38	Double Batt	2170 ft²	0.11	Wood

FORM R405-2017

INPUT SUMMARY CHECKLIST REPORT

WALLS

√	#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
____	1	S	Exterior	Frame - Wood	Main	13	16	4	9		147.0 ft²		0.23	0.75	0
____	2	W	Exterior	Frame - Wood	Main	13	4		9		36.0 ft²		0.23	0.75	0
____	3	S	Exterior	Frame - Wood	Main	13	24		9		216.0 ft²		0.23	0.75	0
____	4	S	Garage	Frame - Wood	Main	13	22	8	9		204.0 ft²		0.23	0.75	0
____	5	E	Exterior	Frame - Wood	Main	13	28		9		252.0 ft²		0.23	0.75	0
____	6	N	Exterior	Frame - Wood	Main	13	20		9		180.0 ft²		0.23	0.75	0
____	7	N	Exterior	Frame - Wood	Main	13	26	4	9		237.0 ft²		0.23	0.75	0
____	8	E	Exterior	Frame - Wood	Main	13	12		9		108.0 ft²		0.23	0.75	0
____	9	N	Exterior	Frame - Wood	Main	13	16	8	9		150.0 ft²		0.23	0.75	0
____	10	W	Exterior	Frame - Wood	Main	13	40	4	9		363.0 ft²		0.23	0.75	0

DOORS

√	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
_____	1	S	Insulated	Main	None	.46	3		6	8	20 ft²
_____	2	S	Insulated	Main	None	.46	3		6	8	20 ft²

WINDOWS

Orientation shown is the entered, Proposed orientation.

√	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Area	Overhang Depth	Overhang Separation	Int Shade	Screening
_____	1	S	1	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	2	S	3	Vinyl	Low-E Double	Yes	0.36	0.25	N	30.0 ft²	7 ft 6 in	1 ft 0 in	None	None
_____	3	E	5	Vinyl	Low-E Double	Yes	0.36	0.25	N	4.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	4	E	5	Vinyl	Low-E Double	Yes	0.36	0.25	N	16.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	5	N	6	Vinyl	Low-E Double	Yes	0.36	0.25	N	30.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	6	N	7	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	9 ft 6 in	1 ft 0 in	None	None
_____	7	N	7	TIM	Low-E Double	Yes	0.36	0.25	N	40.0 ft²	9 ft 6 in	1 ft 0 in	None	None
_____	8	W	10	Vinyl	Low-E Double	Yes	0.36	0.25	N	30.0 ft²	1 ft 6 in	1 ft 0 in	None	None

GARAGE

√	#	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
_____	1	528.82111 ft²	528.82111 ft²	64.6667 ft	9 ft	1

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000286	1550.3	85.11	160.06	.1128	5

FORM R405-2017

INPUT SUMMARY CHECKLIST REPORT

HEATING SYSTEM

√	#	System Type	Subtype	Speed	Efficiency	Capacity	Block	Ducts
_____	1	Electric Heat Pump/	None	Single	HSPF:8.2	31.8 kBtu/hr	1	sys#1

COOLING SYSTEM

√	#	System Type	Subtype	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
_____	1	Central Unit/	None	Single	SEER: 14	22.93 kBtu/hr	690 cfm	0.7	1	sys#1

HOT WATER SYSTEM

√	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
_____	1	Electric	None	Garage	0.92	50 gal	40 gal	120 deg	None

SOLAR HOT WATER SYSTEM

√	FSEC Cert #	Company Name	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
_____	None	None			ft²		

DUCTS

√	#	---- Supply ---- Location	R-Value	Area	---- Return ---- Location	Area	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat	Cool
_____	1	Attic	6	516.75 f	Attic	103.35 f	Default Leakage	Garage	(Default) c	(Default) c			1	1

TEMPERATURES

Programable Thermostat: Y

Ceiling Fans:

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

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

MASS

Mass Type	Area	Thickness	Furniture Fraction	Space
Default(8 lbs/sq.ft.	0 ft²	0 ft	0.3	Main

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 98

The lower the Energy Performance Index, the more efficient the home.

1. New home or, addition	1. New (From Plans)
2. Single-family or multiple-family	2. Single-family
3. No. of units (if multiple-family)	3. 1
4. Number of bedrooms	4. 4
5. Is this a worst case? (yes/no)	5. No
6. Conditioned floor area (sq. ft.)	6. 2067
7. Windows, type and area	
a) U-factor:(weighted average)	7a. 0.360
b) Solar Heat Gain Coefficient (SHGC)	7b. 0.250
c) Area	7c. 180.0
8. Skylights	
a) U-factor:(weighted average)	8a. NA
b) Solar Heat Gain Coefficient (SHGC)	8b. NA
9. Floor type, insulation level:	
a) Slab-on-grade (R-value)	9a. 0.0
b) Wood, raised (R-value)	9b.
c) Concrete, raised (R-value)	9c.
10. Wall type and insulation:	
A. Exterior:	
1. Wood frame (Insulation R-value)	10A1. 13.0
2. Masonry (Insulation R-value)	10A2.
B. Adjacent:	
1. Wood frame (Insulation R-value)	10B1. 13.0
2. Masonry (Insulation R-value)	10B2.
11. Ceiling type and insulation level	
a) Under attic	11a. 38.0
b) Single assembly	11b.
c) Knee walls/skylight walls	11c.
d) Radiant barrier installed	11d. Yes

12. Ducts, location & insulation level	
a) Supply ducts	R 6.0
b) Return ducts	R 6.0
c) AHU location	Garage
13. Cooling system:	Capacity 22.9
a) Split system	SEER
b) Single package	SEER
c) Ground/water source	SEER/COP
d) Room unit/PTAC	EER
e) Other	14.0
14. Heating system:	Capacity 31.8
a) Split system heat pump	HSPF
b) Single package heat pump	HSPF
c) Electric resistance	COP
d) Gas furnace, natural gas	AFUE
e) Gas furnace, LPG	AFUE
f) Other	8.20
15. Water heating system	
a) Electric resistance	EF 0.92
b) Gas fired, natural gas	EF
c) Gas fired, LPG	EF
d) Solar system with tank	EF
e) Dedicated heat pump with tank	EF
f) Heat recovery unit	HeatRec%
g) Other	
16. HVAC credits claimed (Performance Method)	
a) Ceiling fans	
b) Cross ventilation	Yes
c) Whole house fan	No
d) Multizone cooling credit	
e) Multizone heating credit	
f) Programmable thermostat	Yes

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

I certify that this home has complied with the Florida Building Code, Energy Conservation, 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: _____ City/FL Zip: Lake City, FL 32025

Envelope Leakage Test Report (Blower Door Test)

Residential Prescriptive, Performance or ERI Method Compliance
2017 Florida Building Code, Energy Conservation, 6th Edition

Jurisdiction:	Permit #:

Job Information

Builder: Community: Lot: 3

Address:

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 R405-2017 (Performance) or R406-2017 (ERI), section labeled as infiltration, sub-section ACH50.

ACH(50) specified on Form R405-2017-Energy Calc (Performance) or R406-2017 (ERI): 5.000

_____ x 60 ÷ 18603 = _____
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 Statutes*, 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 2017 6th 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

Project Title:
Lot 3 Forest Country

Lake City, FL 32025

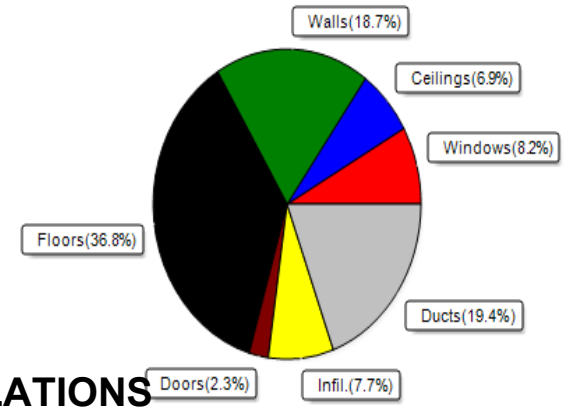
8/27/2020

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	**31803**	**Btuh**	**Total cooling load calculation**	**22925**	**Btuh**
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	100.0	31803	Sensible (SHR = 0.70)	87.5	16048
Heat Pump + Auxiliary(0.0kW)	100.0	31803	Latent	150.2	6878
			Total (Electric Heat Pump)	100.0	22925

WINTER CALCULATIONS

Winter Heating Load (for 2067 sqft)

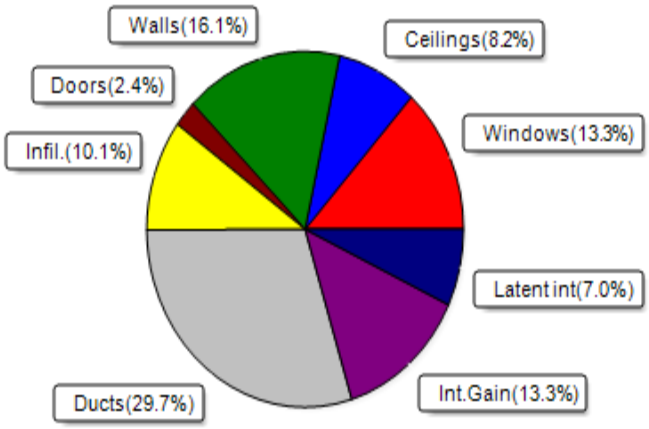
Load component			Load	
Window total	180	sqft	2592	Btuh
Wall total	1673	sqft	5940	Btuh
Door total	40	sqft	736	Btuh
Ceiling total	2170	sqft	2203	Btuh
Floor total	2067	sqft	11706	Btuh
Infiltration	56	cfm	2450	Btuh
Duct loss			6177	Btuh
Subtotal			**31803**	**Btuh**
Ventilation	0	cfm	0	Btuh
TOTAL HEAT LOSS			**31803**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 2067 sqft)

Load component			Load	
Window total	180	sqft	3055	Btuh
Wall total	1673	sqft	3680	Btuh
Door total	40	sqft	552	Btuh
Ceiling total	2170	sqft	1873	Btuh
Floor total			0	Btuh
Infiltration	42	cfm	873	Btuh
Internal gain			3040	Btuh
Duct gain			5272	Btuh
Sens. Ventilation	0	cfm	0	Btuh
Blower Load			0	Btuh
Total sensible gain			**18345**	**Btuh**
Latent gain(ducts)			1532	Btuh
Latent gain(infiltration)			1448	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			1600	Btuh
Total latent gain			**4580**	**Btuh**
TOTAL HEAT GAIN			**22925**	**Btuh**



8th Edition

EnergyGauge® System Sizing
PREPARED BY: _____
DATE: _____

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Project Title:
Lot 3 Forest Country
Lake City, FL 32025 Building Type: User

8/27/2020

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	30.0	14.4	432 Btuh
3	2, NFRC 0.25	Vinyl	0.36	E	4.0	14.4	58 Btuh
4	2, NFRC 0.25	Vinyl	0.36	E	16.0	14.4	230 Btuh
5	2, NFRC 0.25	Vinyl	0.36	N	30.0	14.4	432 Btuh
6	2, NFRC 0.25	Vinyl	0.36	N	15.0	14.4	216 Btuh
7	2, NFRC 0.25	TIM	0.36	N	40.0	14.4	576 Btuh
8	2, NFRC 0.25	Vinyl	0.36	W	30.0	14.4	432 Btuh
	Window Total				180.0(sqft)		2592 Btuh

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	132	3.55	469 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	36	3.55	128 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	166	3.55	589 Btuh
4	Frame - Wood	- Adj	(0.089)	13.0/0.0	184	3.55	653 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	232	3.55	824 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	150	3.55	533 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	182	3.55	646 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	108	3.55	383 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	150	3.55	533 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	333	3.55	1182 Btuh
	Wall Total				1673(sqft)		5940 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	2170	1.0	2203 Btuh
	Ceiling Total			2170(sqft)		2203Btuh

Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	248.0 ft(perim.)	47.2	11706 Btuh
	Floor Total			2067 sqft		11706 Btuh

	Envelope Subtotal:	23176 Btuh

Infiltration	Type	Wholehouse ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural	0.18	18603	1.00	55.9	2450 Btuh

Duct load	Average sealed, R6.0, Supply(Att), Return(Att)	(DLM of 0.241)	6177 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Project Title:
Lot 3 Forest Country
Lake City, FL 32025 Building Type: User

8/27/2020

All Zones	**Sensible Subtotal All Zones**	**31803 Btuh**

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	31803 Btuh 0 Btuh 31803 Btuh

EQUIPMENT

1. Electric Heat Pump	#	31803 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

Project Title:
Lot 3 Forest Country

Lake City, FL 32025

8/27/2020

Reference City: Gainesville, FL Temperature Difference: 19.0F(TMY3 99%) Humidity difference: 51gr.

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	S	1.5ft.	1.0ft.	15.0	15.0	0.0	12	14	181 Btuh
2	2 NFRC	0.25, 0.36		No	No	S	7.5ft.	1.0ft.	30.0	30.0	0.0	12	14	363 Btuh
3	2 NFRC	0.25, 0.36		No	No	E	1.5ft.	1.0ft.	4.0	1.0	3.0	12	31	105 Btuh
4	2 NFRC	0.25, 0.36		No	No	E	1.5ft.	1.0ft.	16.0	1.0	15.0	12	31	477 Btuh
5	2 NFRC	0.25, 0.36		No	No	N	1.5ft.	1.0ft.	30.0	0.0	30.0	12	12	363 Btuh
6	2 NFRC	0.25, 0.36		No	No	N	9.5ft.	1.0ft.	15.0	0.0	15.0	12	12	181 Btuh
7	2 NFRC	0.25, 0.36		No	No	N	9.5ft.	1.0ft.	40.0	0.0	40.0	12	12	484 Btuh
8	2 NFRC	0.25, 0.36		No	No	W	1.5ft.	1.0ft.	30.0	1.5	28.5	12	31	901 Btuh
	Window Total								180 (sqft)					3055 Btuh

Walls	Type	U-Value	R-Value	Area(sqft)	HTM	Load
			Cav/Sheath			
1	Frame - Wood - Ext	0.09	13.0/0.0	132.0	2.3	299 Btuh
2	Frame - Wood - Ext	0.09	13.0/0.0	36.0	2.3	81 Btuh
3	Frame - Wood - Ext	0.09	13.0/0.0	166.0	2.3	376 Btuh
4	Frame - Wood - Adj	0.09	13.0/0.0	184.0	1.7	310 Btuh
5	Frame - Wood - Ext	0.09	13.0/0.0	232.0	2.3	525 Btuh
6	Frame - Wood - Ext	0.09	13.0/0.0	150.0	2.3	340 Btuh
7	Frame - Wood - Ext	0.09	13.0/0.0	182.0	2.3	412 Btuh
8	Frame - Wood - Ext	0.09	13.0/0.0	108.0	2.3	244 Btuh
9	Frame - Wood - Ext	0.09	13.0/0.0	150.0	2.3	340 Btuh
10	Frame - Wood - Ext	0.09	13.0/0.0	333.0	2.3	754 Btuh
	Wall Total			1673 (sqft)		3680 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	2170.0	0.86	1873 Btuh
	Ceiling Total			2170 (sqft)		1873 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	2067 (ft-perimeter)	0.0	0 Btuh
	Floor Total		2067.0 (sqft)		0 Btuh

				Envelope Subtotal:		9160 Btuh

Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.14	18603	1	42.0	873 Btuh

Internal gain	Occupants		Btuh/occupant		Appliance	Load
	8	X	230	+	1200	3040 Btuh

	Sensible Envelope Load:	13073 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 3 Forest Country

Lake City, FL 32025

8/27/2020

Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic)	(DGM of 0.403)	5272 Btuh
		Sensible Load All Zones	**18345 Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 3 Forest Country

Lake City, FL 32025

8/27/2020

WHOLE HOUSE TOTALS

	Sensible Envelope Load All Zones	**13073 Btuh**
	Sensible Duct Load	5272 Btuh
	Total Sensible Zone Loads	**18345 Btuh**
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
Whole House	**Total sensible gain**	**18345 Btuh**
Totals for Cooling	Latent infiltration gain (for 51 gr. humidity difference)	1448 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1532 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	**4580 Btuh**
	TOTAL GAIN	**22925 Btuh**

EQUIPMENT

1. Central Unit	#	22925 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