

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: Papka Residence_ Street: City, State, Zip: Lake City, FL, 32024 Owner: Brian & Brittany Papka Design Location: FL, Gainesville	Builder Name: Permit Office: Columbia County Permit Number: Jurisdiction: County: Columbia (Florida Climate Zone 2)
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Glass/Floor Area: 0.130	Total Proposed Modified Loads: 84.17 Total Baseline Loads: 88.23	PASS
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I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code. PREPARED BY: <u> </u> DATE: <u> </u> I hereby certify that this building, as designed, is in compliance with the Florida Energy Code. OWNER/AGENT: <u> </u> DATE: <u> </u>	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: <u> </u> DATE: <u> </u>
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- 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).

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	Papka Residence_	Bedrooms:	4	Address Type:	Lot Information
Building Type:	User	Conditioned Area:	3480	Lot #	4
Owner Name:	Brian & Brittany Papka	Total Stories:	2	Block/Subdivision:	The Oaks Of LC
# 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 , 32024
Family Type:	Detached				
New/Existing:	New (From Plans)				
Comment:					

CLIMATE

✓	Design Location	TMY Site	Design Temp 97.5 %	2.5 %	Int Design Temp Winter	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	3480	33532

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	1st Floor	2846	28460	Yes	8	3	1	Yes	Yes	Yes
2	2nd Floor	634	5072	No	4	1	1	Yes	Yes	Yes

FLOORS

✓	#	Floor Type	Space	Perimeter	Perimeter R-Value	Area	Joist R-Value	Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulation	1st Floor	270.667 ft	0	2846 ft²	----	0	0	1
_____	2	Floor over Garage	2nd Floor	----	----	634 ft²	19	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	Gable or shed	Composition shingles	4350 ft²	730 ft²	Dark	Y	0.96	No	0.9	No	0	36.87

ATTIC

✓	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Partial cathedral ceili	Vented	300	3480 ft²	Y	N

INPUT SUMMARY CHECKLIST REPORT

CEILING

✓	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
✓	1	Under Attic (Vented)	1st Floor	38	Double Batt	2988 ft²	0.11	Wood
✓	2	Under Attic (Vented)	2nd Floor	38	Double Batt	665.7 ft²	0.11	Wood

WALLS

✓	#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	In	Height Ft	In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
✓	1	NW	Exterior	Frame - Wood	1st Floor	19	27	10	10		278.3 ft²		0.23	0.75	0
✓	2	NE	Exterior	Frame - Wood	1st Floor	19	10		10		100.0 ft²		0.23	0.75	0
✓	3	NW	Exterior	Frame - Wood	1st Floor	19	20	10	10		208.3 ft²		0.23	0.75	0
✓	4	SW	Exterior	Frame - Wood	1st Floor	19	10		10		100.0 ft²		0.23	0.75	0
✓	5	NW	Exterior	Frame - Wood	1st Floor	19	7	4	10		73.3 ft²		0.23	0.75	0
✓	6	S	Exterior	Frame - Wood	1st Floor	19	16	8	10		166.7 ft²		0.23	0.75	0
✓	7	SE	Exterior	Frame - Wood	1st Floor	19	7	4	10		73.3 ft²		0.23	0.75	0
✓	8	SW	Exterior	Frame - Wood	1st Floor	19	24	8	10		246.7 ft²		0.23	0.75	0
✓	9	SE	Exterior	Frame - Wood	1st Floor	19	28	8	10		286.7 ft²		0.23	0.75	0
✓	10	SW	Exterior	Frame - Wood	1st Floor	19	4		10		40.0 ft²		0.23	0.75	0
✓	11	SE	Exterior	Frame - Wood	1st Floor	19	19	10	10		198.3 ft²		0.23	0.75	0
✓	12	NE	Exterior	Frame - Wood	1st Floor	19	21	8	10		216.7 ft²		0.23	0.75	0
✓	13	SE	Exterior	Frame - Wood	1st Floor	19	24	2	10		241.7 ft²		0.23	0.75	0
✓	14	NE	Exterior	Frame - Wood	1st Floor	19	17	2	10		171.7 ft²		0.23	0.75	0
✓	15	NW	Garage	Frame - Wood	1st Floor	13	24		10		240.0 ft²		0.23	0.75	0
✓	16	NE	Garage	Frame - Wood	1st Floor	13	6	4	10		63.3 ft²		0.23	0.75	0
✓	17	W	Exterior	Frame - Wood	2nd Floor	13	13	4	8		106.7 ft²		0.23	0.75	0
✓	18	SW	Exterior	Frame - Wood	2nd Floor	13	37	2	8		297.3 ft²		0.23	0.75	0
✓	19	NE	Exterior	Frame - Wood	2nd Floor	13	37	2	8		297.3 ft²		0.23	0.75	0
✓	20	S	Exterior	Frame - Wood	2nd Floor	19	5	8	8		45.3 ft²		0.23	0.75	0
✓	21	N	Exterior	Frame - Wood	2nd Floor	19	5	8	8		45.3 ft²		0.23	0.75	0

DOORS

✓	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area
✓	1	NE	Insulated	1st Floor	None	.46	3		8		24 ft²
✓	2	NW	Insulated	1st Floor	None	.46	3		8		24 ft²

WINDOWS

Orientation shown is the entered, Proposed orientation.

✓	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Area	Overhang Depth	Separation	Int Shade	Screening
✓	1	NW	1	Vinyl	Low-E Double	Yes	0.36	0.25	N	20.0 ft²	11 ft 6 in	1 ft 0 in	None	None
✓	2	NW	1	TIM	Low-E Double	Yes	0.36	0.25	N	42.7 ft²	11 ft 6 in	1 ft 0 in	None	None
✓	3	NW	3	Vinyl	Low-E Double	Yes	0.36	0.25	N	48.0 ft²	1 ft 0 in	4 ft 0 in	None	None
✓	4	NW	5	Vinyl	Low-E Double	Yes	0.36	0.25	N	7.1 ft²	1 ft 6 in	1 ft 0 in	None	None
✓	5	S	6	Vinyl	Low-E Double	Yes	0.36	0.25	N	30.0 ft²	1 ft 0 in	3 ft 0 in	None	None
✓	6	SW	8	Vinyl	Low-E Double	Yes	0.36	0.25	N	20.0 ft²	1 ft 6 in	1 ft 0 in	None	None
✓	7	SE	9	Vinyl	Low-E Double	Yes	0.36	0.25	N	36.0 ft²	1 ft 6 in	1 ft 0 in	None	None

INPUT SUMMARY CHECKLIST REPORT

WINDOWS

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_____	8	SE	9	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	9	SE	9	Vinyl	Low-E Double	Yes	0.36	0.25	N	8.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	10	SE	11	Vinyl	Low-E Double	Yes	0.36	0.25	N	56.0 ft²	1 ft 0 in	3 ft 0 in	None	None
_____	11	NE	12	TIM	Low-E Double	Yes	0.36	0.25	N	80.0 ft²	6 ft 0 in	1 ft 0 in	None	None
_____	12	SE	13	TIM	Low-E Double	Yes	0.36	0.25	N	24.0 ft²	18 ft 0 in	1 ft 0 in	None	None
_____	13	NE	14	Vinyl	Low-E Double	Yes	0.36	0.25	N	12.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	14	W	17	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	1 ft 0 in	2 ft 0 in	None	None
_____	15	NE	19	Vinyl	Low-E Double	Yes	0.36	0.25	N	37.5 ft²	1 ft 0 in	0 ft 6 in	None	None

GARAGE

✓	#	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
_____	1	883.992 ft²	883.992 ft²	91.16 ft	10 ft	1

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000306	2794.3	153.31	287.81	.1393	5

HEATING SYSTEM

✓	#	System Type	Subtype	Speed	Efficiency	Capacity	Block	Ducts
_____	1	Electric Heat Pump/	None	Single	HSPF: 8.2	50.94 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	44.67 kBtu/hr	1350 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 #	CompanyName	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
_____	None	None			ft²		

INPUT SUMMARY CHECKLIST REPORT

DUCTS															
✓	#	Location	---- Supply ----		---- Return ----		LeakageType	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC #		
			R-Value	Area	Location	Area							Heat	Cool	
	1	Attic	6	870 ft²	Attic	174 ft²	Default Leakage	2nd Floor	(Default)	c(Default)	c		1	1	
TEMPERATURES															
Programable Thermostat: Y			Ceiling Fans:												
Cooling	☐ Jan	☐ Feb	☐ Mar	☐ Apr	☐ May	☒ Jun	☒ Jul	☒ Aug	☒ Sep	☐ Oct	☐ Nov	☐ Dec			
Heating	☒ Jan	☒ Feb	☒ Mar	☒ Apr	☐ May	☐ Jun	☐ Jul	☐ Aug	☐ Sep	☐ Oct	☒ Nov	☒ Dec			
Venting	☐ Jan	☐ Feb	☒ Mar	☒ Apr	☐ May	☐ Jun	☐ Jul	☐ Aug	☐ Sep	☒ Oct	☒ Nov	☐ Dec			
Thermostat Schedule: HERS 2006 Reference															
Schedule Type			1	2	3	4	5	6	7	8	9	10	11	12	
Cooling (WD)	AM	78	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	78	
Cooling (WEH)	AM	78	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	78	
Heating (WD)	AM	66	66	66	66	66	68	68	68	68	68	68	68	68	
	PM	68	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	68	
	PM	68	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		1st Floor						
Default(8 lbs/sq.ft.)			0 ft²		0 ft		0.3		2nd Floor						

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 95

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

, Lake City, FL, 32024

1. New construction or existing	New (From Plans)	10. Wall Type and Insulation	Insulation	Area
2. Single family or multiple family	Detached	a. Frame - Wood, Exterior	R=19.0	2492.30 ft²
3. Number of units, if multiple family	1	b. Frame - Wood, Exterior	R=13.0	701.33 ft²
4. Number of Bedrooms	4	c. Frame - Wood, Adjacent	R=13.0	303.33 ft²
5. Is this a worst case?	No	d. N/A	R=	ft²
6. Conditioned floor area (ft²)	3480	11. Ceiling Type and insulation level	Insulation	Area
7. Windows**	Description	a. Under Attic (Vented)	R=38.0	3653.70 ft²
a. U-Factor:	Dbl, U=0.36	b. N/A	R=	ft²
SHGC:	SHGC=0.25	c. N/A	R=	ft²
b. U-Factor:	N/A	12. Ducts, location & insulation level	R	ft²
SHGC:		a. Sup: Attic, Ret: Attic, AH: 2nd Floor	6	870
c. U-Factor:	N/A	13. Cooling systems	kBtu/hr	Efficiency
SHGC:		a. Central Unit	44.7	SEER:14.00
d. U-Factor:	N/A	14. Heating systems	kBtu/hr	Efficiency
SHGC:		a. Electric Heat Pump	50.9	HSPF:8.20
Area Weighted Average Overhang Depth:	4.357 ft.	15. Hot water systems	Cap: 50 gallons	
Area Weighted Average SHGC:	0.250	a. Electric	EF: 0.92	
8. Skylights	Description	b. Conservation features		
a. U-Factor(AVG):	N/A	None		
SHGC(AVG):	N/A	Credits (Performance method)		CV, Pstat
9. Floor Types	Insulation	Area		
a. Slab-On-Grade Edge Insulation	R=0.0	2846.00 ft²		
b. Floor over Garage	R=19.0	634.00 ft²		
c. N/A	R=	ft²		

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: _____ City/FL Zip: _____



*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:	Community: Lot: 4
Address:	
City: Lake City	State: FL Zip: 32024
Air Leakage Test Results <i>Passing results must meet either the Performance, Prescriptive, or ERI Method</i>	
☐ 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	
$\frac{\text{CFM}(50) \times 60}{\text{Building Volume}} = \text{ACH}(50)$ 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) <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 <i>code official</i>. Testing shall be performed at any time after creation of all penetrations of the <i>building thermal envelope</i>. 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

Brian & Brittany Papka

Project Title:
Papka Residence_

Lake City, FL 32024

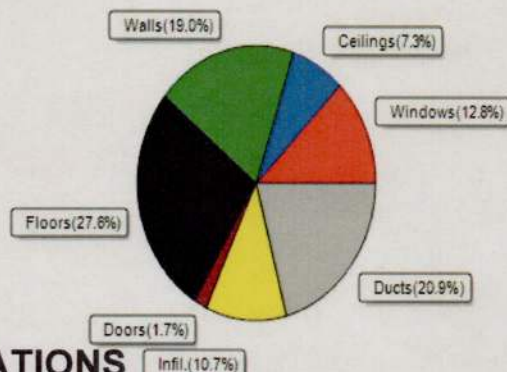
1/22/2021

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			50944	Btuh	
Total cooling load calculation			44667	Btuh	
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	100.0	50944	Sensible (SHR = 0.70)	85.5	31267
Heat Pump + Auxiliary(0.0kW)	100.0	50944	Latent	165.6	13400
			Total (Electric Heat Pump)	100.0	44667

WINTER CALCULATIONS

Winter Heating Load (for 3480 sqft)

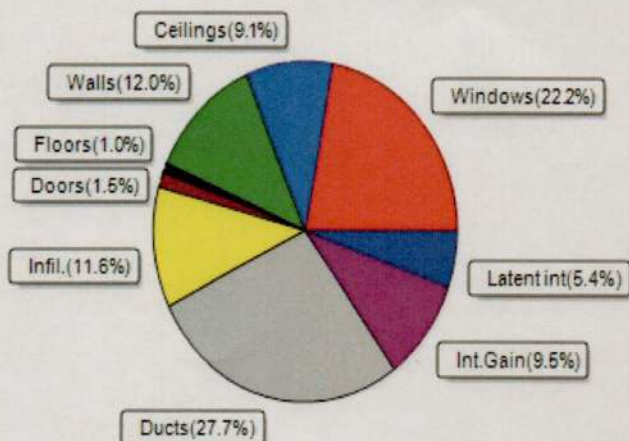
Load component			Load	
Window total	451	sqft	6498	Btuh
Wall total	2998	sqft	9692	Btuh
Door total	48	sqft	883	Btuh
Ceiling total	3654	sqft	3709	Btuh
Floor total	See detail report		14047	Btuh
Infiltration	125	cfm	5453	Btuh
Duct loss			10660	Btuh
Subtotal			50944	Btuh
Ventilation	0	cfm	0	Btuh
TOTAL HEAT LOSS			50944	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 3480 sqft)

Load component			Load	
Window total	451	sqft	9919	Btuh
Wall total	2998	sqft	5362	Btuh
Door total	48	sqft	662	Btuh
Ceiling total	3654	sqft	4080	Btuh
Floor total			445	Btuh
Infiltration	93	cfm	1943	Btuh
Internal gain			4260	Btuh
Duct gain			9904	Btuh
Sens. Ventilation	0	cfm	0	Btuh
Blower Load			0	Btuh
Total sensible gain			36576	Btuh
Latent gain(ducts)			2468	Btuh
Latent gain(infiltration)			3224	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			2400	Btuh
Total latent gain			8092	Btuh
TOTAL HEAT GAIN			44667	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY:

DATE:

1/24/2021

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Brian & Brittany Papka

Project Title:
Papka Residence
Building Type: User

Lake City, FL 32024

1/22/2021

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	NW	20.0		14.4	288 Btuh
2	2, NFRC 0.25	TIM	0.36	NW	42.7		14.4	614 Btuh
3	2, NFRC 0.25	Vinyl	0.36	NW	48.0		14.4	691 Btuh
4	2, NFRC 0.25	Vinyl	0.36	NW	7.1		14.4	102 Btuh
5	2, NFRC 0.25	Vinyl	0.36	S	30.0		14.4	432 Btuh
6	2, NFRC 0.25	Vinyl	0.36	SW	20.0		14.4	288 Btuh
7	2, NFRC 0.25	Vinyl	0.36	SE	36.0		14.4	518 Btuh
8	2, NFRC 0.25	Vinyl	0.36	SE	15.0		14.4	216 Btuh
9	2, NFRC 0.25	Vinyl	0.36	SE	8.0		14.4	115 Btuh
10	2, NFRC 0.25	Vinyl	0.36	SE	56.0		14.4	806 Btuh
11	2, NFRC 0.25	TIM	0.36	NE	80.0		14.4	1152 Btuh
12	2, NFRC 0.25	TIM	0.36	SE	24.0		14.4	346 Btuh
13	2, NFRC 0.25	Vinyl	0.36	NE	12.0		14.4	173 Btuh
14	2, NFRC 0.25	Vinyl	0.36	W	15.0		14.4	216 Btuh
15	2, NFRC 0.25	Vinyl	0.36	NE	37.5		14.4	540 Btuh
Window Total					451.3(sqft)			6498 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	216		3.09	667 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	100		3.09	309 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	160		3.09	496 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	100		3.09	309 Btuh
5	Frame - Wood	- Ext	(0.077)	19.0/0.0	66		3.09	205 Btuh
6	Frame - Wood	- Ext	(0.077)	19.0/0.0	137		3.09	422 Btuh
7	Frame - Wood	- Ext	(0.077)	19.0/0.0	73		3.09	227 Btuh
8	Frame - Wood	- Ext	(0.077)	19.0/0.0	227		3.09	701 Btuh
9	Frame - Wood	- Ext	(0.077)	19.0/0.0	228		3.09	704 Btuh
10	Frame - Wood	- Ext	(0.077)	19.0/0.0	40		3.09	124 Btuh
11	Frame - Wood	- Ext	(0.077)	19.0/0.0	142		3.09	440 Btuh
12	Frame - Wood	- Ext	(0.077)	19.0/0.0	137		3.09	422 Btuh
13	Frame - Wood	- Ext	(0.077)	19.0/0.0	218		3.09	673 Btuh
14	Frame - Wood	- Ext	(0.077)	19.0/0.0	136		3.09	419 Btuh
15	Frame - Wood	- Adj	(0.089)	13.0/0.0	216		3.55	767 Btuh
16	Frame - Wood	- Adj	(0.089)	13.0/0.0	63		3.55	225 Btuh
17	Frame - Wood	- Ext	(0.089)	13.0/0.0	92		3.55	325 Btuh
18	Frame - Wood	- Ext	(0.089)	13.0/0.0	297		3.55	1056 Btuh
19	Frame - Wood	- Ext	(0.089)	13.0/0.0	260		3.55	922 Btuh
20	Frame - Wood	- Ext	(0.077)	19.0/0.0	45		3.09	140 Btuh
21	Frame - Wood	- Ext	(0.077)	19.0/0.0	45		3.09	140 Btuh
Wall Total					2998(sqft)			9692 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		24		18.4	442 Btuh
2	Insulated - Garage, n		(0.460)		24		18.4	442 Btuh
Door Total					48(sqft)			883 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Brian & Brittany Papka

Project Title:
Papka Residence
Building Type: User

Lake City, FL 32024

1/22/2021

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Vented Attic/D/Shing	(0.025)	38.0/0.0	2988	1.0	3034 Btuh
2	Vented Attic/D/Shing	(0.025)	38.0/0.0	666	1.0	676 Btuh
	Ceiling Total			3654(sqft)		3709Btuh
Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	270.7 ft(perim.)	47.2	12775 Btuh
2	Raised Wood - Adj	(0.050)	19.0	634.0 sqft	2.0	1272 Btuh
	Floor Total			3480 sqft		14047 Btuh
	Envelope Subtotal:					34830 Btuh
Infiltration	Type	Wholehouse ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural	0.22	33532	1.00	124.5	5453 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.265)					10660 Btuh
All Zones	Sensible Subtotal All Zones					50944 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	50944 Btuh
	Ventilation Sensible Heat Loss	0 Btuh
	Total Heat Loss	50944 Btuh

EQUIPMENT

1. Electric Heat Pump	#	50944 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

Brian & Brittany Papka

Project Title:
Papka Residence_

Lake City, FL 32024

1/22/2021

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	NW		11.5f	1.0ft.	20.0	0.0	20.0	12	24	473	Btuh		
2	2 NFRC	0.25, 0.36	No	No	NW		11.5f	1.0ft.	42.7	0.0	42.7	12	24	1009	Btuh		
3	2 NFRC	0.25, 0.36	No	No	NW		1.0ft.	4.0ft.	48.0	0.0	48.0	12	24	1135	Btuh		
4	2 NFRC	0.25, 0.36	No	No	NW		1.5ft.	1.0ft.	7.1	0.0	7.1	12	24	168	Btuh		
5	2 NFRC	0.25, 0.36	No	No	S		1.0ft.	3.0ft.	30.0	13.4	16.6	12	14	395	Btuh		
6	2 NFRC	0.25, 0.36	No	No	SW		1.5ft.	1.0ft.	20.0	14.7	5.3	12	25	309	Btuh		
7	2 NFRC	0.25, 0.36	No	No	SE		1.5ft.	1.0ft.	36.0	8.8	27.2	12	25	780	Btuh		
8	2 NFRC	0.25, 0.36	No	No	SE		1.5ft.	1.0ft.	15.0	3.7	11.3	12	25	325	Btuh		
9	2 NFRC	0.25, 0.36	No	No	SE		1.5ft.	1.0ft.	8.0	5.9	2.1	12	25	124	Btuh		
10	2 NFRC	0.25, 0.36	No	No	SE		1.0ft.	3.0ft.	56.0	0.0	56.0	12	25	1386	Btuh		
11	2 NFRC	0.25, 0.36	No	No	NE		6.0ft.	1.0ft.	80.0	0.0	80.0	12	24	1891	Btuh		
12	2 NFRC	0.25, 0.36	No	No	SE		18.0f	1.0ft.	24.0	24.0	0.0	12	25	290	Btuh		
13	2 NFRC	0.25, 0.36	No	No	NE		1.5ft.	1.0ft.	12.0	0.0	12.0	12	24	284	Btuh		
14	2 NFRC	0.25, 0.36	No	No	W		1.0ft.	2.0ft.	15.0	0.0	15.0	12	31	464	Btuh		
15	2 NFRC	0.25, 0.36	No	No	NE		1.0ft.	0.5ft.	37.5	0.0	37.5	12	24	886	Btuh		
	Window Total									451 (sqft)					9919 Btuh		
Walls	Type	U-Value					R-Value		Area(sqft)			HTM		Load			
							Cav/Sheath										
1	Frame - Wood - Ext						0.08		19.0/0.0		215.7			1.7		357 Btuh	
2	Frame - Wood - Ext						0.08		19.0/0.0		100.0			1.7		165 Btuh	
3	Frame - Wood - Ext						0.08		19.0/0.0		160.3			1.7		265 Btuh	
4	Frame - Wood - Ext						0.08		19.0/0.0		100.0			1.7		165 Btuh	
5	Frame - Wood - Ext						0.08		19.0/0.0		66.2			1.7		110 Btuh	
6	Frame - Wood - Ext						0.08		19.0/0.0		136.7			1.7		226 Btuh	
7	Frame - Wood - Ext						0.08		19.0/0.0		73.3			1.7		121 Btuh	
8	Frame - Wood - Ext						0.08		19.0/0.0		226.7			1.7		375 Btuh	
9	Frame - Wood - Ext						0.08		19.0/0.0		227.7			1.7		376 Btuh	
10	Frame - Wood - Ext						0.08		19.0/0.0		40.0			1.7		66 Btuh	
11	Frame - Wood - Ext						0.08		19.0/0.0		142.3			1.7		235 Btuh	
12	Frame - Wood - Ext						0.08		19.0/0.0		136.7			1.7		226 Btuh	
13	Frame - Wood - Ext						0.08		19.0/0.0		217.7			1.7		360 Btuh	
14	Frame - Wood - Ext						0.08		19.0/0.0		135.7			1.7		224 Btuh	
15	Frame - Wood - Adj						0.09		13.0/0.0		216.0			1.7		364 Btuh	
16	Frame - Wood - Adj						0.09		13.0/0.0		63.3			1.7		107 Btuh	
17	Frame - Wood - Ext						0.09		13.0/0.0		91.7			2.3		207 Btuh	
18	Frame - Wood - Ext						0.09		13.0/0.0		297.3			2.3		673 Btuh	
19	Frame - Wood - Ext						0.09		13.0/0.0		259.8			2.3		588 Btuh	
20	Frame - Wood - Ext						0.08		19.0/0.0		45.3			1.7		75 Btuh	
21	Frame - Wood - Ext						0.08		19.0/0.0		45.3			1.7		75 Btuh	
	Wall Total									2998 (sqft)					5362 Btuh		
Doors	Type	U-Value					R-Value		Area (sqft)			HTM		Load			
1	Insulated - Exterior								24.0			13.8		331 Btuh			
2	Insulated - Garage								24.0			13.8		331 Btuh			
	Door Total									48 (sqft)					662 Btuh		
Ceilings	Type/Color/Surface	U-Value					R-Value		Area(sqft)			HTM		Load			
1	Vented Attic/DarkShingle/RB						0.025		38.0/0.0		2988.0			1.12		3337 Btuh	
2	Vented Attic/DarkShingle/RB						0.025		38.0/0.0		665.7			1.12		743 Btuh	
	Ceiling Total									3654 (sqft)					4080 Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

Brian & Brittany Papka

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Papka Residence_

Lake City, FL 32024

1/22/2021

Floors	Type	R-Value	Size	HTM	Load	
1	Slab On Grade	0.0	2846 (ft-perimeter)	0.0	0 Btuh	
2	Raised Wood - Adj	19.0	634 (sqft)	0.7	445 Btuh	
	Floor Total		3480.0 (sqft)		445 Btuh	
	Envelope Subtotal:				20469 Btuh	
Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.17	33532	1	93.4	1943 Btuh
Internal gain		Occupants	Btuh/occupant		Appliance	Load
		12	X 230	+	1500	4260 Btuh
	Sensible Envelope Load:					26671 Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic)			(DGM of 0.371)		9904 Btuh
	Sensible Load All Zones					36576 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Brian & Brittany Papka

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Papka Residence_

Lake City, FL 32024

1/22/2021

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	26671 Btuh
	Sensible Duct Load	9904 Btuh
	Total Sensible Zone Loads	36576 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	36576 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	3224 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	2468 Btuh
	Latent occupant gain (12.0 people @ 200 Btuh per person)	2400 Btuh
	Latent other gain	0 Btuh
	Latent total gain	8092 Btuh
	TOTAL GAIN	44667 Btuh

EQUIPMENT

1. Central Unit	#	44667 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