

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: Nickelson Res
 Street:
 City, State, Zip: Lake City, FL, 32024
 Owner: Dale & Karla Nickelson
 Design Location: FL, Gainesville

Builder Name:
 Permit Office: Columbia County
 Permit Number:
 Jurisdiction:
 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)	3477
Conditioned floor area below grade (ft²)	0
7. Windows (349.0 sqft.)	Description Area
a. U-Factor:	Dbl, U=0.36 349.00 ft²
SHGC:	SHGC=0.25
b. U-Factor:	N/A ft²
SHGC:	
c. U-Factor:	N/A ft²
SHGC:	
Area Weighted Average Overhang Depth:	7.049 ft.
Area Weighted Average SHGC:	0.250
8. Skylights	Area
c. U-Factor:(AVG)	N/A ft²
SHGC(AVG):	N/A
9. Floor Types (3477.0 sqft.)	Insulation Area
a. Slab-On-Grade Edge Insulation	R=0.0 2625.00 ft²
b. Floor over Garage	R=19.0 852.00 ft²
c. N/A	R= ft²

10. Wall Types(3736.7 sqft.)	Insulation Area
a. Frame - Wood, Exterior	R=19.0 2288.30 ft²
b. Frame - Wood, Exterior	R=13.0 1060.00 ft²
c. Frame - Wood, Adjacent	R=19.0 388.33 ft²
d. N/A	R= ft²
11. Ceiling Types (3650.6 sqft.)	Insulation Area
a. Under Attic (Vented)	R=38.0 3650.60 ft²
b. N/A	R= ft²
c. N/A	R= ft²
12. Ducts	R ft²
a. Sup: Attic, Ret: Attic, AH: Attic	6 869.25
13. Cooling systems	kBtu/hr Efficiency
a. Central Unit	22.3 SEER:14.00
14. Heating systems	kBtu/hr Efficiency
a. Electric Heat Pump	31.0 HSPF:8.20
15. Hot water systems	
a. Propane Tankless	Cap: 1 gallons
	EF: 0.590
b. Conservation features	
None	
16. Credits	CV, Pstat

Glass/Floor Area: 0.100

Total Proposed Modified Loads: 73.06

Total Baseline Loads: 87.57

PASS

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

PREPARED BY: HADATE: 2/9/2021

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).

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	Nickelson Res	Bedrooms:	3	Address Type:	Lot Information
Building Type:	User	Conditioned Area:	3477	Lot #	6-B
Owner Name:	Dale & Karla Nickelson	Total Stories:	2	Block/Subdivision:	Rose Creek Plan
# 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		Int Design Temp		Heating	Design	Daily Temp
			97.5 %	2.5 %	Winter	Summer	Degree Days	Moisture	Range
_____	FL, Gainesville	FL_GAINESVILLE_REGI	32	92	70	75	1305.5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	3477	33066

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	1st Floor	2625	26250	Yes	8	3	1	Yes	Yes	Yes
2	2nd Floor	852	6816	No	2	0	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 ft	0	2625 ft²	----	0	0	1
_____	2	Floor over Garage	2nd Floor	----	----	852 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	4526 ft²	1448 ft²	Medium	Y	0.96	No	0.9	No	0	39.81

ATTIC

✓	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	300	3477 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	2756 ft²	0.11	Wood
✓	2	Under Attic (Vented)	2nd Floor	38	Double Batt	894.6 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	S	Exterior	Frame - Wood	1st Floor	19	49	8	10		496.7 ft²		0.23	0.75	0
✓	2	E	Exterior	Frame - Wood	1st Floor	19	4		10		40.0 ft²		0.23	0.75	0
✓	3	S	Exterior	Frame - Wood	1st Floor	19	13		10		130.0 ft²		0.23	0.75	0
✓	4	E	Garage	Frame - Wood	1st Floor	19	24	4	10		243.3 ft²		0.23	0.75	0
✓	5	S	Garage	Frame - Wood	1st Floor	19	14	6	10	0	145.0 ft²		0.23	0.75	0
✓	6	E	Exterior	Frame - Wood	1st Floor	19	23	2	10		231.7 ft²		0.23	0.75	0
✓	7	N	Exterior	Frame - Wood	1st Floor	19	28	8	10		286.7 ft²		0.23	0.75	0
✓	8	W	Exterior	Frame - Wood	1st Floor	19	21		10		210.0 ft²		0.23	0.75	0
✓	9	N	Exterior	Frame - Wood	1st Floor	19	34		10		340.0 ft²		0.23	0.75	0
✓	10	E	Exterior	Frame - Wood	1st Floor	19	6		10		60.0 ft²		0.23	0.75	0
✓	11	N	Exterior	Frame - Wood	1st Floor	19	15		10		150.0 ft²		0.23	0.75	0
✓	12	W	Exterior	Frame - Wood	1st Floor	19	34	4	10		343.3 ft²		0.23	0.75	0
✓	13	S	Exterior	Frame - Wood	2nd Floor	13	16	6	8		132.0 ft²		0.23	0.75	0
✓	14	E	Exterior	Frame - Wood	2nd Floor	13	34	10	8		278.7 ft²		0.23	0.75	0
✓	15	N	Exterior	Frame - Wood	2nd Floor	13	20	11	8		167.3 ft²		0.23	0.75	0
✓	16	E	Exterior	Frame - Wood	2nd Floor	13	6	7	8		52.7 ft²		0.23	0.75	0
✓	17	N	Exterior	Frame - Wood	2nd Floor	13	13	8	8		109.3 ft²		0.23	0.75	0
✓	18	W	Exterior	Frame - Wood	2nd Floor	13	20		8		160.0 ft²		0.23	0.75	0
✓	19	S	Exterior	Frame - Wood	2nd Floor	13	14		8		112.0 ft²		0.23	0.75	0
✓	20	E	Exterior	Frame - Wood	2nd Floor	13	6		8		48.0 ft²		0.23	0.75	0

DOORS

✓	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area
✓	1	E	Insulated	1st Floor	None	.46	3		8		24 ft²
✓	2	S	Insulated	1st Floor	None	.46	6		8		48 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	S	1	Vinyl	Low-E Double	Yes	0.36	0.25	N	72.0 ft²	9 ft 6 in	1 ft 0 in	None	None
✓	2	S	3	Vinyl	Low-E Double	Yes	0.36	0.25	N	12.0 ft²	5 ft 6 in	1 ft 0 in	None	None
✓	3	E	6	Vinyl	Low-E Double	Yes	0.36	0.25	N	12.0 ft²	1 ft 6 in	1 ft 0 in	None	None
✓	4	E	6	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	7	Vinyl	Low-E Double	Yes	0.36	0.25	N	18.0 ft²	1 ft 6 in	1 ft 0 in	None	None
✓	6	W	8	Vinyl	Low-E Double	Yes	0.36	0.25	N	18.0 ft²	1 ft 6 in	1 ft 0 in	None	None
✓	7	W	8	TIM	Low-E Double	Yes	0.36	0.25	N	24.0 ft²	1 ft 6 in	1 ft 0 in	None	None
✓	8	N	9	Vinyl	Low-E Double	Yes	0.36	0.25	N	14.0 ft²	13 ft 6 in	1 ft 0 in	None	None

INPUT SUMMARY CHECKLIST REPORT

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
✓	9	N	9	TIM	Low-E Double	Yes	0.36	0.25	N	96.0 ft²	13 ft 6 in	1 ft 0 in	None	None
✓	10	W	12	Vinyl	Low-E Double	Yes	0.36	0.25	N	18.0 ft²	1 ft 6 in	1 ft 0 in	None	None
✓	11	W	12	Vinyl	Low-E Double	Yes	0.36	0.25	N	4.0 ft²	1 ft 6 in	1 ft 0 in	None	None
✓	12	S	13	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	1 ft 0 in	1 ft 0 in	None	None
✓	13	E	14	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	888.2415 ft²	888.2415 ft²	81.33 ft	10 ft	1

INFILTRATION								
#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000302	2755.5	151.18	283.81	.1385	5

HEATING SYSTEM								
✓	#	System Type	Subtype	Speed	Efficiency	Capacity	Block	Ducts
✓	1	Electric Heat Pump/	None	Single	HSPF:8.2	31.04 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	22.29 kBtu/hr	660 cfm	0.7	1	sys#1

HOT WATER SYSTEM									
✓	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
✓	1	Propane	Tankless	Exterior	0.59	1 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		

DUCTS														
✓	#	---- Supply ----			---- Return ----			Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC #	
		Location	R-Value	Area	Location	Area	LeakageType						Heat	Cool
✓	1	Attic	6	869.25 f	Attic	173.85 f	Default Leakage	Attic	(Default)	c(Default)	c		1	1

INPUT SUMMARY CHECKLIST REPORT

TEMPERATURES													
ProgramableThermostat: Y		Ceiling Fans:											
Cooling Heating Venting	☐ Jan ☒ Jan ☐ Jan	☐ Feb ☒ Feb ☐ Feb	☐ Mar ☒ Mar ☒ Mar	☐ Apr ☐ Apr ☒ Apr	☐ May ☐ May ☐ May	☒ Jun ☐ Jun ☐ Jun	☒ Jul ☐ Jul ☐ Jul	☒ Aug ☐ Aug ☐ Aug	☒ Sep ☐ Sep ☐ Sep	☐ Oct ☒ Oct ☐ Oct	☐ Nov ☒ Nov ☒ Nov	☐ Dec ☒ Dec ☐ Dec	
Thermostat Schedule: HERS 2006 Reference		Hours											
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
	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		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* = 83

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	2288.30 ft²
3. Number of units, if multiple family	1	b. Frame - Wood, Exterior	R=13.0	1060.00 ft²
4. Number of Bedrooms	3	c. Frame - Wood, Adjacent	R=19.0	388.33 ft²
5. Is this a worst case?	No	d. N/A	R=	ft²
6. Conditioned floor area (ft²)	3477	11. Ceiling Type and insulation level	Insulation	Area
7. Windows**	Description	a. Under Attic (Vented)	R=38.0	3650.60 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: Attic	6	869.25
c. U-Factor:	N/A	13. Cooling systems	kBtu/hr	Efficiency
SHGC:		a. Central Unit	22.3	SEER:14.00
d. U-Factor:	N/A	14. Heating systems	kBtu/hr	Efficiency
SHGC:		a. Electric Heat Pump	31.0	HSPF:8.20
Area Weighted Average Overhang Depth:	7.049 ft.	15. Hot water systems		
Area Weighted Average SHGC:	0.250	a. Propane	Cap: 1 gallons	
8. Skylights	Description		EF: 0.59	
a. U-Factor(AVG):	N/A	b. Conservation features		
SHGC(AVG):	N/A	None		
9. Floor Types	Insulation	Credits (Performance method)		CV, Pstat
a. Slab-On-Grade Edge Insulation	R=0.0			
b. Floor over Garage	R=19.0			
c. N/A	R=			
	Area			
	2625.00 ft²			
	852.00 ft²			
	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: 6-B	
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 <i>(7) 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

Dale & Karla Nickelson

Project Title:
Nickelson Res

Lake City, FL 32024

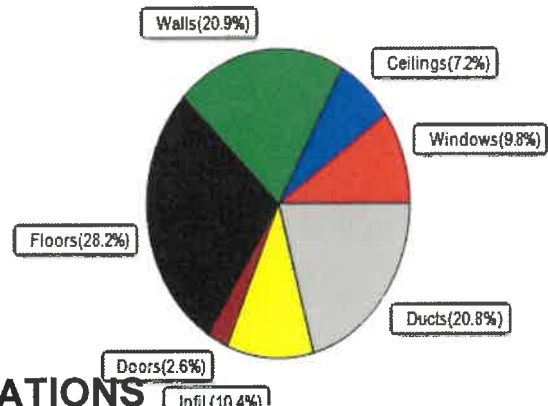
2/9/2021

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	51241 Btuh	Total cooling load calculation	39987 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	60.6 31044	Sensible (SHR = 0.70)	48.4 15600
Heat Pump + Auxiliary(0.0kW)	60.6 31044	Latent	86.2 6686
		Total (Electric Heat Pump)	55.7 22286

WINTER CALCULATIONS

Winter Heating Load (for 3477 sqft)

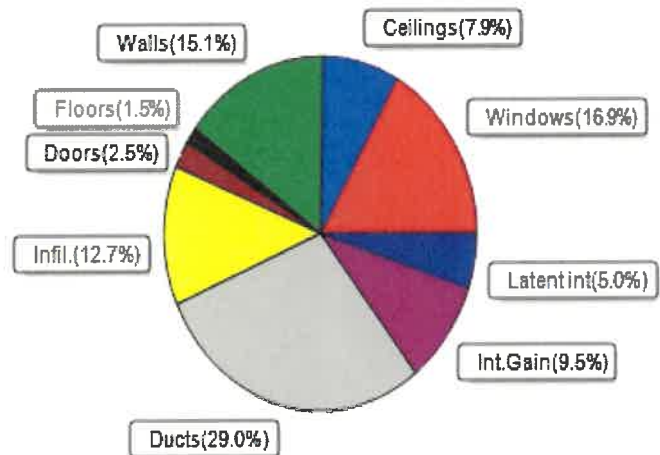
Load component		Load	
Window total	349 sqft	5026	Btuh
Wall total	3316 sqft	10715	Btuh
Door total	72 sqft	1325	Btuh
Ceiling total	3651 sqft	3706	Btuh
Floor total	See detail report	14453	Btuh
Infiltration	122 cfm	5349	Btuh
Duct loss		10668	Btuh
Subtotal		51241	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		51241	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 3477 sqft)

Load component		Load	
Window total	349 sqft	6746	Btuh
Wall total	3316 sqft	6034	Btuh
Door total	72 sqft	994	Btuh
Ceiling total	3651 sqft	3150	Btuh
Floor total		598	Btuh
Infiltration	92 cfm	1906	Btuh
Internal gain		3800	Btuh
Duct gain		9007	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		32235	Btuh
Latent gain(ducts)		2590	Btuh
Latent gain(infiltration)		3162	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		2000	Btuh
Total latent gain		7752	Btuh
TOTAL HEAT GAIN		39987	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

2/9/2021

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Dale & Karla Nickelson

Project Title:

Nickelson Res

Lake City, FL 32024

Building Type: User

2/9/2021

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	72.0		14.4	1037 Btuh
2	2, NFRC 0.25	Vinyl	0.36	S	12.0		14.4	173 Btuh
3	2, NFRC 0.25	Vinyl	0.36	E	12.0		14.4	173 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	18.0		14.4	259 Btuh
6	2, NFRC 0.25	Vinyl	0.36	W	18.0		14.4	259 Btuh
7	2, NFRC 0.25	TIM	0.36	W	24.0		14.4	346 Btuh
8	2, NFRC 0.25	Vinyl	0.36	N	14.0		14.4	202 Btuh
9	2, NFRC 0.25	TIM	0.36	N	96.0		14.4	1382 Btuh
10	2, NFRC 0.25	Vinyl	0.36	W	18.0		14.4	259 Btuh
11	2, NFRC 0.25	Vinyl	0.36	W	4.0		14.4	58 Btuh
12	2, NFRC 0.25	Vinyl	0.36	S	15.0		14.4	216 Btuh
13	2, NFRC 0.25	Vinyl	0.36	E	30.0		14.4	432 Btuh
Window Total					349.0(sqft)			5026 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	377		3.09	1164 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	40		3.09	124 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	118		3.09	365 Btuh
4	Frame - Wood	- Adj	(0.077)	19.0/0.0	219		3.09	678 Btuh
5	Frame - Wood	- Adj	(0.077)	19.0/0.0	145		3.09	448 Btuh
6	Frame - Wood	- Ext	(0.077)	19.0/0.0	204		3.09	630 Btuh
7	Frame - Wood	- Ext	(0.077)	19.0/0.0	269		3.09	830 Btuh
8	Frame - Wood	- Ext	(0.077)	19.0/0.0	168		3.09	519 Btuh
9	Frame - Wood	- Ext	(0.077)	19.0/0.0	230		3.09	711 Btuh
10	Frame - Wood	- Ext	(0.077)	19.0/0.0	60		3.09	185 Btuh
11	Frame - Wood	- Ext	(0.077)	19.0/0.0	150		3.09	464 Btuh
12	Frame - Wood	- Ext	(0.077)	19.0/0.0	321		3.09	993 Btuh
13	Frame - Wood	- Ext	(0.089)	13.0/0.0	117		3.55	415 Btuh
14	Frame - Wood	- Ext	(0.089)	13.0/0.0	249		3.55	883 Btuh
15	Frame - Wood	- Ext	(0.089)	13.0/0.0	167		3.55	594 Btuh
16	Frame - Wood	- Ext	(0.089)	13.0/0.0	53		3.55	187 Btuh
17	Frame - Wood	- Ext	(0.089)	13.0/0.0	109		3.55	388 Btuh
18	Frame - Wood	- Ext	(0.089)	13.0/0.0	160		3.55	568 Btuh
19	Frame - Wood	- Ext	(0.089)	13.0/0.0	112		3.55	398 Btuh
20	Frame - Wood	- Ext	(0.089)	13.0/0.0	48		3.55	170 Btuh
Wall Total					3316(sqft)			10715 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Garage, n		(0.460)		24		18.4	442 Btuh
2	Insulated - Exterior, n		(0.460)		48		18.4	883 Btuh
Door Total					72(sqft)			1325Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Dale & Karla Nickelson

Project Title:

Nickelson Res

Lake City, FL 32024

Building Type: User

2/9/2021

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Vented Attic/L/Shing	(0.025)	38.0/0.0	2756	1.0	2798 Btuh
2	Vented Attic/L/Shing	(0.025)	38.0/0.0	895	1.0	908 Btuh
	Ceiling Total			3651(sqft)		3706Btuh
Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	270.0 ft(perim.)	47.2	12744 Btuh
2	Raised Wood - Adj	(0.050)	19.0	852.0 sqft	2.0	1709 Btuh
	Floor Total			3477 sqft		14453 Btuh
	Envelope Subtotal:					35224 Btuh
Infiltration	Type	Wholehouse ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural	0.22	33066	1.00	122.2	5349 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.263)					10668 Btuh
All Zones	Sensible Subtotal All Zones					51241 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	51241 Btuh
	Ventilation Sensible Heat Loss	0 Btuh
	Total Heat Loss	51241 Btuh

EQUIPMENT

1. Electric Heat Pump	#	31044 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

Dale & Karla Nickelson

Project Title:
Nickelson Res

Lake City, FL 32024

2/9/2021

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		9.5ft.	1.0ft.	72.0	72.0	0.0	12	14	871 Btuh	
2	2 NFRC	0.25, 0.36	No	No	S		5.5ft.	1.0ft.	12.0	12.0	0.0	12	14	145 Btuh	
3	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	1.0ft.	12.0	1.5	10.5	12	31	344 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.	18.0	0.0	18.0	12	12	218 Btuh	
6	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	18.0	0.7	17.3	12	31	543 Btuh	
7	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	24.0	0.7	23.3	12	31	729 Btuh	
8	2 NFRC	0.25, 0.36	No	No	N		13.5f	1.0ft.	14.0	0.0	14.0	12	12	169 Btuh	
9	2 NFRC	0.25, 0.36	No	No	N		13.5f	1.0ft.	96.0	0.0	96.0	12	12	1161 Btuh	
10	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	18.0	0.7	17.3	12	31	543 Btuh	
11	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	4.0	1.0	3.0	12	31	105 Btuh	
12	2 NFRC	0.25, 0.36	No	No	S		1.0ft.	1.0ft.	15.0	14.0	1.0	12	14	183 Btuh	
13	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	1.0ft.	30.0	1.5	28.5	12	31	901 Btuh	
	Excursion													357 Btuh	
	Window Total								349 (sqft)					6746 Btuh	
Walls	Type	U-Value		R-Value		Area(sqft)		HTM		Load					
1	Frame - Wood - Ext		0.08		19.0/0.0		376.7		1.7		623 Btuh				
2	Frame - Wood - Ext		0.08		19.0/0.0		40.0		1.7		66 Btuh				
3	Frame - Wood - Ext		0.08		19.0/0.0		118.0		1.7		195 Btuh				
4	Frame - Wood - Adj		0.08		19.0/0.0		219.3		1.5		322 Btuh				
5	Frame - Wood - Adj		0.08		19.0/0.0		145.0		1.5		213 Btuh				
6	Frame - Wood - Ext		0.08		19.0/0.0		203.7		1.7		337 Btuh				
7	Frame - Wood - Ext		0.08		19.0/0.0		268.7		1.7		444 Btuh				
8	Frame - Wood - Ext		0.08		19.0/0.0		168.0		1.7		278 Btuh				
9	Frame - Wood - Ext		0.08		19.0/0.0		230.0		1.7		380 Btuh				
10	Frame - Wood - Ext		0.08		19.0/0.0		60.0		1.7		99 Btuh				
11	Frame - Wood - Ext		0.08		19.0/0.0		150.0		1.7		248 Btuh				
12	Frame - Wood - Ext		0.08		19.0/0.0		321.3		1.7		531 Btuh				
13	Frame - Wood - Ext		0.09		13.0/0.0		117.0		2.3		265 Btuh				
14	Frame - Wood - Ext		0.09		13.0/0.0		248.7		2.3		563 Btuh				
15	Frame - Wood - Ext		0.09		13.0/0.0		167.3		2.3		379 Btuh				
16	Frame - Wood - Ext		0.09		13.0/0.0		52.7		2.3		119 Btuh				
17	Frame - Wood - Ext		0.09		13.0/0.0		109.3		2.3		247 Btuh				
18	Frame - Wood - Ext		0.09		13.0/0.0		160.0		2.3		362 Btuh				
19	Frame - Wood - Ext		0.09		13.0/0.0		112.0		2.3		253 Btuh				
20	Frame - Wood - Ext		0.09		13.0/0.0		48.0		2.3		109 Btuh				
	Wall Total								3316 (sqft)					6034 Btuh	
Doors	Type	Area (sqft)		HTM		Load									
1	Insulated - Garage		24.0		13.8	331 Btuh									
2	Insulated - Exterior		48.0		13.8	662 Btuh									
	Door Total								72 (sqft)					994 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		2756.0		0.86		2378 Btuh				
2	Vented Attic/Light/Shingle/RB		0.025		38.0/0.0		894.6		0.86		772 Btuh				
	Ceiling Total								3651 (sqft)					3150 Btuh	
Floors	Type	R-Value		Size		HTM		Load							
1	Slab On Grade		0.0		2625 (ft-perimeter)		0.0		0 Btuh						
2	Raised Wood - Adj		19.0		852 (sqft)		0.7		598 Btuh						
	Floor Total								3477.0 (sqft)					598 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Dale & Karla Nickelson

Project Title:
Nickelson Res

Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL 32024

2/9/2021

	Envelope Subtotal:					17522 Btuh
Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.17	33066	1	91.6	1906 Btuh
Internal gain		Occupants	Btuh/occupant		Appliance	Load
		10	X 230	+	1500	3800 Btuh
	Sensible Envelope Load:					23228 Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.388)					9007 Btuh
	Sensible Load All Zones					32235 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Dale & Karla Nickelson

Project Title:
Nickelson Res

Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL 32024

2/9/2021

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	23228 Btuh
	Sensible Duct Load	9007 Btuh
	Total Sensible Zone Loads	32235 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	32235 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	3162 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	2590 Btuh
	Latent occupant gain (10.0 people @ 200 Btuh per person)	2000 Btuh
	Latent other gain	0 Btuh
	Latent total gain	7752 Btuh
	TOTAL GAIN	39987 Btuh

EQUIPMENT

1. Central Unit	#	22286 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