FORM R405-2020

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	Lot 1 Mayfair Unit 5	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	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)	1311
Conditioned floor area below grade (ft²)	0

7. Windows(113.0 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0.36	113.00 ft²
SHGC:	SHGC=0.25	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		4.686 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	1311.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

10. Wall Types(1192.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	1192.00 ft²
b. N/A		
c. N/A		
d. N/A		

11. Ceiling Types(1376.0 sqft.)	Insulation	Area
a. Flat ceiling under att (Vented)	R=38.0	1376.00 ft²
b. N/A		
c. N/A		

12. Roof(Comp. Shingles, Vented)	Deck R=0.0	1466 ft²

13. Ducts, location & insulation level	R	ft²
a. Sup: Attic, Ret: Attic, AH: Main	6	328
b.		
c.		

14. Cooling Systems	kBtu/hr	Efficiency
a. Central Unit	16.9	SEER2:15.00

15. Heating Systems	kBtu/hr	Efficiency
a. Electric Heat Pump	19.6	HSPF2:8.80

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

Glass/Floor Area: 0.086

Total Proposed Modified Loads: 31.96

Total Baseline Loads: 35.88

PASS

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

PREPARED BY: _____

DATE: 10 / 23 / 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:	Lot 1 Mayfair Unit 5			Address type:	Lot
Building Type:	User	Bedrooms:	3	Lot #:	1
Owner:		Conditioned Area:	1311	Block/SubDivision:	Mayfair SD V
Builder Home ID:		Total Stories:	1	PlatBook:	
Builder Name:		Worst Case:	No	Street:	
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	1311	10488 cu ft

SPACES

√	Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Finished	Cooled	Heated
___	1	Main	1311	10488	Yes	6	3	Yes	Yes	Yes

FLOORS (Total Exposed Area = 1311 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	149	0	1311 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	Gable or shed	Composition shingles	1466 ft²	328 ft²	Medium	Y	0.96	No	0.9	No	0	26.57

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
___	1	Full attic	Vented	300	1311 ft²	Y	N

CEILING (Total Exposed Area = 1376 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	1376.0ft²	0.024	0.11	Wood

FORM R405-2020

INPUT SUMMARY CHECKLIST REPORT

WALLS (Total Exposed Area = 1192 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	S	Exterior	Frame - Wood	Main	13.0	14.0	0	8.0	0	112.0	0.084		0.23	0.75	0 %
___ 2	S	Exterior	Frame - Wood	Main	13.0	18.0	0	8.0	0	144.0	0.084		0.23	0.75	0 %
___ 3	S	Exterior	Frame - Wood	Main	13.0	14.0	0	8.0	0	112.0	0.084		0.23	0.75	0 %
___ 4	E	Exterior	Frame - Wood	Main	13.0	28.0	6	8.0	0	228.0	0.084		0.23	0.75	0 %
___ 5	N	Exterior	Frame - Wood	Main	13.0	46.0	0	8.0	0	368.0	0.084		0.23	0.75	0 %
___ 6	W	Exterior	Frame - Wood	Main	13.0	28.0	6	8.0	0	228.0	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	S	Exterior	Insulated	Main	None	0.46	3.00	0	6.00	8	20.0ft²
___ 2	S	Exterior	Insulated	Main	None	0.46	3.00	0	6.00	8	20.0ft²

WINDOWS (Total Exposed Area = 113 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	S	1	Vinyl	Low-E Double	Y	0.36	0.25	N	N	15.0	1	3.00	5.00	7.5	0.5	None	None
___ 2	S	2	Vinyl	Low-E Double	Y	0.36	0.25	N	N	30.0	2	3.00	5.00	7.5	0.5	None	None
___ 3	S	3	Vinyl	Low-E Double	Y	0.36	0.25	N	N	15.0	1	3.00	5.00	7.5	0.5	None	None
___ 4	N	5	Vinyl	Low-E Double	Y	0.36	0.25	N	N	15.0	1	3.00	5.00	1.5	0.5	None	None
___ 5	N	5	TIM	Low-E Double	Y	0.36	0.25	N	N	20.0	1	3.00	6.67	1.5	0.5	None	None
___ 6	N	5	Vinyl	Low-E Double	Y	0.36	0.25	N	N	18.0	2	3.00	3.00	1.5	0.5	None	None

INFILTRATION

✓ #	Scope	Method	SLA	CFM50	ELA	EqLA	ACH	ACH50	Space(s)	Infiltration Test Volume
___ 1	Wholehouse	Proposed ACH(50)	0.00025	874	47.95	90.02	0.0980	5.0	All	10488 cu ft

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: 8.80	19.6		0.00	0.00	0.00	sys#1	1

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	16.9	510	0.75	sys#1	1

FORM R405-2020

INPUT SUMMARY CHECKLIST REPORT

HOT WATER SYSTEM

✓	#	System Type	Subtype	Location	EF(UEF)	Cap	Use	SetPnt	Fixture Flow	Pipe Ins.	Pipe length
___	1	Electric	None	Main	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	R-Value	Area	---------Return--------- Location	R-Value	Area	Leakage Type	Air Handler	CFM 25 TOT	CFM 25 OUT	QN	RLF	HVAC # Heat	Cool
___	1	Attic	6.0	328 ft²	Attic	6.0	66 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* = 89

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

,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)		1311
Conditioned floor area below grade (ft²)		0

7. Windows**	Description	Area
a. U-Factor:	Dbl, U=0.36	113.00 ft²
SHGC:	SHGC=0.25	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		4.686 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	1311.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

10. Wall Types(1192.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	1192.00 ft²
b. N/A		
c. N/A		
d. N/A		

11. Ceiling Types(1376.0 sqft.)	Insulation	Area
a. Flat ceiling under att (Vented)	R=38.0	1376.00 ft²
b. N/A		
c. N/A		

12. Roof(Comp. Shingles, Vented)	Deck R=0.0	1466 ft²

13. Ducts, location & insulation level	R	ft²
a. Sup: Attic, Ret: Attic, AH: Main	6	328
b.		
c.		

14. Cooling Systems	kBtu/hr	Efficiency
a. Central Unit	16.9	SEER2:15.00

15. Heating Systems	kBtu/hr	Efficiency
a. Electric Heat Pump	19.6	HSPF2:8.80

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: 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: Community: Lot: 1

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 R405-2020 (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 ÷ 10488 = _____
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 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

Project Title:
Lot 1 Mayfair Unit 5

Lake City, FL 32025

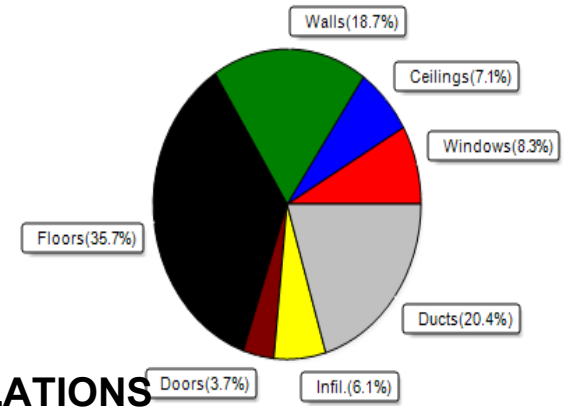
10/23/2023

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)					
Humidity data: Interior RH (50%) Outdoor wet bulb (79F) Humidity difference(54gr.)					
Winter design temperature(MJ8 99%/Cu)	33	F	Summer design temperature(MJ8 99%/Cu)	99	F
Winter setpoint	70	F	Summer setpoint	75	F
Winter temperature difference	37	F	Summer temperature difference	24	F
Total heating load calculation	**18215**	**Btuh**	**Total cooling load calculation**	**18346**	**Btuh**
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	107.4	19565	Sensible (SHR = 0.75)	82.7	12659
Heat Pump + Auxiliary(0.0kW)	107.4	19565	Latent	139.3	4220
			Total (Electric Heat Pump)	92.0	16879

WINTER CALCULATIONS

Winter Heating Load (for 1311 sqft)

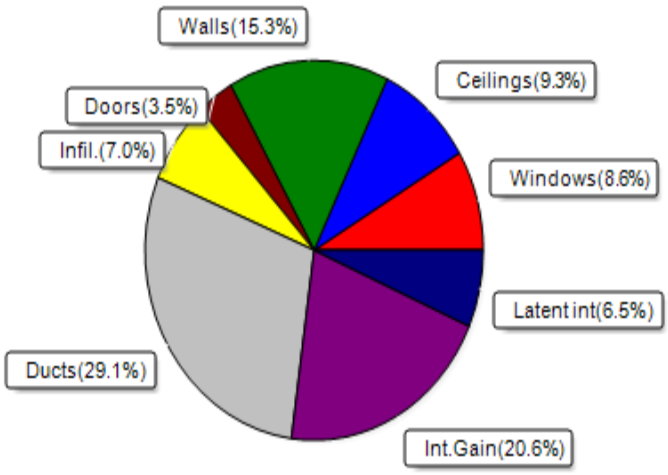
Load component			Load	
Window total	113	sqft	1505	Btuh
Wall total	1039	sqft	3412	Btuh
Door total	40	sqft	681	Btuh
Ceiling total	1376	sqft	1292	Btuh
Floor total	1311	sqft	6505	Btuh
Infiltration	27	cfm	1110	Btuh
Duct loss			3710	Btuh
Subtotal			**18215**	**Btuh**
Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
TOTAL HEAT LOSS			**18215**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 1311 sqft)

Load component			Load	
Window total	113	sqft	1571	Btuh
Wall total	1039	sqft	2813	Btuh
Door total	40	sqft	644	Btuh
Ceiling total	1376	sqft	1711	Btuh
Floor total			0	Btuh
Infiltration	21	cfm	540	Btuh
Internal gain			3780	Btuh
Duct gain			4258	Btuh
Sens.Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
Blower Load			0	Btuh
Total sensible gain			**15317**	**Btuh**
Latent gain(ducts)			1078	Btuh
Latent gain(infiltration)			751	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			1200	Btuh
Total latent gain			**3030**	**Btuh**
TOTAL HEAT GAIN			**18346**	**Btuh**



Powered by ACCA MANUAL J 8th Edition

EnergyGauge® System Sizing
PREPARED BY: _____
DATE: 10 / 23 / 2023

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Project Title:
Lot 1 Mayfair Unit 5
Lake City, FL 32025 Building Type: User

10/23/2023

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 37.0 °F (MJ8 99%/Cu)
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	S	15.0	13.3	200 Btuh
2	2, NFRC 0.25	Vinyl	0.36	S	30.0	13.3	400 Btuh
3	2, NFRC 0.25	Vinyl	0.36	S	15.0	13.3	200 Btuh
4	2, NFRC 0.25	Vinyl	0.36	N	15.0	13.3	200 Btuh
5	2, NFRC 0.25	TIM	0.36	N	20.0	13.3	266 Btuh
6	2, NFRC 0.25	Vinyl	0.36	N	18.0	13.3	240 Btuh
	Window Total				113.0(sqft)		1505 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	77	3.28	253 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	94	3.28	309 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	97	3.28	319 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	228	3.28	749 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	315	3.28	1034 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	228	3.28	749 Btuh
	Wall Total				1039(sqft)		3412 Btuh
Doors	Type	Storm	Ueff.		Area X	HTM=	Load
1	Insulated - Exterior,	n	(0.460)		20	17.0	340 Btuh
2	Insulated - Exterior,	n	(0.460)		20	17.0	340 Btuh
	Door Total				40(sqft)		681Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area X	HTM=	Load
1	Flat ceil/M/Shing		(0.025)	38.0/0.0	1376	0.94	1292 Btuh
	Ceiling Total				1376(sqft)		1292Btuh
Floors	Type		Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	149.0 ft(perim.)	43.7	6505 Btuh
	Floor Total				1311 sqft		6505 Btuh
					Envelope Subtotal:		13396 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural		0.16	10488	1.00	27.4	1110 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att)					(DLM of 0.256)	3710 Btuh
All Zones				**Sensible Subtotal All Zones**			**18215 Btuh**

Manual J Winter Calculations

Residential Load - Component Details (continued)

Project Title:
Lot 1 Mayfair Unit 5
Lake City, FL 32025 Building Type: User

10/23/2023

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm) Total Heat Loss	18215 Btuh 0 Btuh 18215 Btuh

EQUIPMENT

1. Electric Heat Pump	#	19565 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 1 Mayfair Unit 5

Lake City, FL 32025

10/23/2023

Reference City: Gainesville, FL (Defaults)
Humidity difference: 54gr.

Temperature Difference: 24.0F(MJ8 99%/Cu)
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	S	7.5ft.	0.5ft.	15.0	15.0	0.0	14	16	208 Btuh
2	2 NFRC	0.25, 0.36		No	No	S	7.5ft.	0.5ft.	30.0	30.0	0.0	14	16	417 Btuh
3	2 NFRC	0.25, 0.36		No	No	S	7.5ft.	0.5ft.	15.0	15.0	0.0	14	16	208 Btuh
4	2 NFRC	0.25, 0.36		No	No	N	1.5ft.	0.5ft.	15.0	0.0	15.0	14	14	208 Btuh
5	2 NFRC	0.25, 0.36		No	No	N	1.5ft.	0.5ft.	20.0	0.0	20.0	14	14	278 Btuh
6	2 NFRC	0.25, 0.36		No	No	N	1.5ft.	0.5ft.	18.0	0.0	18.0	14	14	250 Btuh
	Window Total								113 (sqft)					1571 Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load
1	Frame - Wood - Ext	0.09	13.0/0.0	77.0	2.7	208 Btuh
2	Frame - Wood - Ext	0.09	13.0/0.0	94.0	2.7	254 Btuh
3	Frame - Wood - Ext	0.09	13.0/0.0	97.0	2.7	263 Btuh
4	Frame - Wood - Ext	0.09	13.0/0.0	228.0	2.7	617 Btuh
5	Frame - Wood - Ext	0.09	13.0/0.0	315.0	2.7	853 Btuh
6	Frame - Wood - Ext	0.09	13.0/0.0	228.0	2.7	617 Btuh
	Wall Total			1039 (sqft)		2813 Btuh

Doors	Type	Area (sqft)	HTM	Load
1	Insulated - Exterior	20.0	16.1	322 Btuh
2	Insulated - Exterior	20.0	16.1	322 Btuh
	Door Total	40 (sqft)		644 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	1376.0	1.24	1711 Btuh
	Ceiling Total			1376 (sqft)		1711 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	1311 (ft-perimeter)	0.0	0 Btuh
	Floor Total		1311.0 (sqft)		0 Btuh

	Envelope Subtotal:	6739 Btuh

Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.12	10488	1	20.6	540 Btuh

Internal gain	Occupants	Btuh/occupant		Appliance	Load
	6	X 230	+	2400	3780 Btuh

	Sensible Envelope Load:	11058 Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.385)	4258 Btuh
	Sensible Load All Zones	**15317 Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 1 Mayfair Unit 5

Lake City, FL 32025

10/23/2023

WHOLE HOUSE TOTALS

	Sensible Envelope Load All Zones	**11058 Btuh**
	Sensible Duct Load	4258 Btuh
	Total Sensible Zone Loads	**15317 Btuh**
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
Whole House	**Total sensible gain**	**15317 Btuh**
Totals for Cooling	Latent infiltration gain (for 54 gr. humidity difference)	751 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1078 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	**3030 Btuh**
	TOTAL GAIN	**18346 Btuh**

EQUIPMENT

1. Central Unit	#	16879 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)

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