FORM R405-2017

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	Button Residence	Builder Name:	
Street:	1687 NW Queen Road	Permit Office:	Columbia County
City, State, Zip:	Lake City , FL , 32055	Permit Number:	
Owner:	Charles & Dorris Button	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	2
5. Is this a worst case?	No
6. Conditioned floor area above grade (ft²)	1800
Conditioned floor area below grade (ft²)	0

7. Windows (172.0 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0.36	172.00 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:		9.500 ft.
Area Weighted Average SHGC:		0.250

8. Floor Types (1800.0 sqft.)	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	1800.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

9. Wall Types (1376.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=19.0	1376.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²
d. N/A	R=	ft²

10. Ceiling Types (1800.0 sqft.)	Insulation	Area
a. Under Attic (Vented)	R=38.0	1800.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

11. Ducts	R	ft²
a. Sup: Attic, Ret: Attic, AH: Main	6	450

12. Cooling systems	kBtu/hr	Efficiency
a. Central Unit	16.6	SEER:14.00

13. Heating systems	kBtu/hr	Efficiency
a. Electric Heat Pump	24.0	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: 0.096

Total Proposed Modified Loads: 39.22

Total Baseline Loads: 42.75

PASS

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

PREPARED BY:

DATE: 10/14/2020

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:	Button Residence	Bedrooms:	2	Address Type:	Street Address
Building Type:	User	Conditioned Area:	1800	Lot #	
Owner Name:	Charles & Dorris Button	Total Stories:	1	Block/Subdivision:	
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:		Rotate Angle:	0	Street:	1687 NW Queen Road
Permit Office:	Columbia County	Cross Ventilation:	Yes	County:	Columbia
Jurisdiction:		Whole House Fan:	No	City, State, Zip:	Lake City , FL , 32055
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	1800	14400

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	1800	14400	Yes	4	2	1	Yes	Yes	Yes

FLOORS

✓	#	Floor Type	Space	Perimeter	R-Value	Area		Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulation	Main	172 ft	0	1800 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	Gable or shed	Metal	2013 ft²	450 ft²	Light	Y	0.96	No	0.9	No	0	26.6

ATTIC

✓	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	300	1800 ft²	Y	N

CEILING

✓	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
_____	1	Under Attic (Vented)	Main	38	Double Batt	1800 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	19	50		8		400.0 ft²		0.23	0.75	0
____	2	E	Exterior	Frame - Wood	Main	19	36		8		288.0 ft²		0.23	0.75	0
____	3	N	Exterior	Frame - Wood	Main	19	50		8		400.0 ft²		0.23	0.75	0
____	4	W	Exterior	Frame - Wood	Main	19	36		8		288.0 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	W	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	60.0 ft²	9 ft 6 in	0 ft 6 in	None	None
_____	2	E	2	Vinyl	Low-E Double	Yes	0.36	0.25	N	20.0 ft²	9 ft 6 in	0 ft 6 in	None	None
_____	3	N	3	Vinyl	Low-E Double	Yes	0.36	0.25	N	18.0 ft²	9 ft 6 in	0 ft 6 in	None	None
_____	4	N	3	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	9 ft 6 in	0 ft 6 in	None	None
_____	5	N	3	TIM	Low-E Double	Yes	0.36	0.25	N	40.0 ft²	9 ft 6 in	0 ft 6 in	None	None
_____	6	W	4	Vinyl	Low-E Double	Yes	0.36	0.25	N	4.0 ft²	9 ft 6 in	0 ft 6 in	None	None
_____	7	W	4	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	9 ft 6 in	0 ft 6 in	None	None

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000254	1200	65.88	123.89	.0956	5

HEATING SYSTEM

√	#	System Type	Subtype	Speed	Efficiency	Capacity	Block	Ducts
_____	1	Electric Heat Pump/	None	Single	HSPF:8.2	23.99 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	16.55 kBtu/hr	510 cfm	0.7	1	sys#1

HOT WATER SYSTEM

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

FORM R405-2017

INPUT SUMMARY CHECKLIST REPORT

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	HVAC # Cool
_____	1	Attic	6	450 ft²	Attic	90 ft²	Default Leakage	Main	(Default) c	(Default) c			1	1

TEMPERATURES

Programable Thermostat: Y

Ceiling Fans:

	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

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* =92

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.	2
5. Is this a worst case? (yes/no)	5.	No
6. Conditioned floor area (sq. ft.)	6.	1800
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.	172.0
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.	19.0
2. Masonry (Insulation R-value)	10A2.	
B. Adjacent:		
1. Wood frame (Insulation R-value)	10B1.	
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		Main
13. Cooling system:	Capacity	16.6
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	24.0
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: 1687 NW Queen Road City/FL Zip: Lake City, FL 32055

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: NA
Address: 1687 NW Queen Road		
City: Lake City	State: FL	Zip: 32055

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 ÷ 14400 = _____
CFM(50) Building Volume ACH(50)

☐ **PASS**

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

Method for calculating building volume:

○ Retrieved from architectural plans

● Code software calculated

○ Field measured and calculated

R402.4.1.2 Testing. Testing shall be conducted in accordance with ANSI/RESNET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7) *Florida Statues* or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i) or an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official*. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, back draft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

Testing Company

Company Name: _____ Phone: _____

I hereby verify that the above Air Leakage results are in accordance with the 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

Charles & Dorris Button
1687 NW Queen Road
Lake City, FL 32055

Project Title:
Button Residence

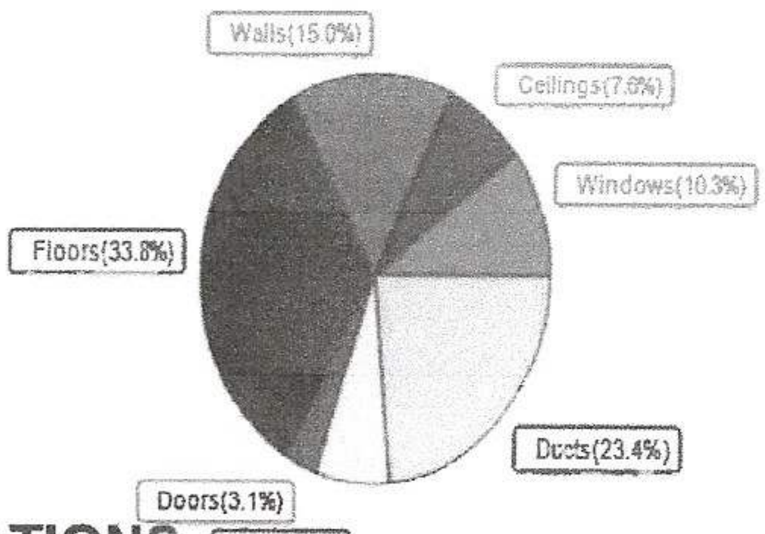
10/14/2020

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	**23990**	**Btuh**		**Total cooling load calculation**	**16716**	**Btuh**
Submitted heating capacity	% of calc	Btuh		Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	100.0	23990		Sensible (SHR = 0.70)	85.2	11587
Heat Pump + Auxiliary(0.0kW)	100.0	23990		Latent	159.4	4966
				Total (Electric Heat Pump)	99.0	16553

WINTER CALCULATIONS

Winter Heating Load (for 1800 sqft)

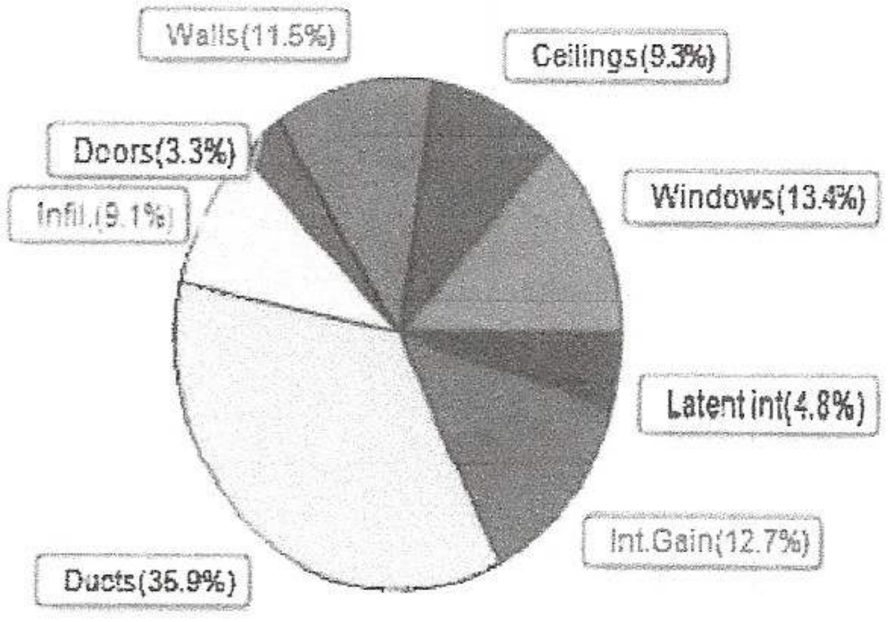
Load component			Load	
Window total	172	sqft	2477	Btuh
Wall total	1164	sqft	3598	Btuh
Door total	40	sqft	736	Btuh
Ceiling total	1800	sqft	1827	Btuh
Floor total	1800	sqft	8118	Btuh
Infiltration	37	cfm	1608	Btuh
Duct loss			5625	Btuh
Subtotal			**23990**	**Btuh**
Ventilation	0	cfm	0	Btuh
TOTAL HEAT LOSS			**23990**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 1800 sqft)

Load component			Load	
Window total	172	sqft	2244	Btuh
Wall total	1164	sqft	1925	Btuh
Door total	40	sqft	552	Btuh
Ceiling total	1800	sqft	1553	Btuh
Floor total			0	Btuh
Infiltration	28	cfm	573	Btuh
Internal gain			2120	Btuh
Duct gain			4634	Btuh
Sens. Ventilation	0	cfm	0	Btuh
Blower Load			0	Btuh
Total sensible gain			**13601**	**Btuh**
Latent gain(ducts)			1364	Btuh
Latent gain(infiltration)			951	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			800	Btuh
Total latent gain			**3115**	**Btuh**
TOTAL HEAT GAIN			**16716**	**Btuh**



8th Edition

EnergyGauge® System Sizing
PREPARED BY: _____
DATE: 10/14/2020

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Charles & Dorris Button
1687 NW Queen Road
Lake City, FL 32055

Project Title:
Button Residence
Building Type: User

10/14/2020

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	60.0	14.4	864 Btuh
2	2, NFRC 0.25	Vinyl	0.36	E	20.0	14.4	288 Btuh
3	2, NFRC 0.25	Vinyl	0.36	N	18.0	14.4	259 Btuh
4	2, NFRC 0.25	Vinyl	0.36	N	15.0	14.4	216 Btuh
5	2, NFRC 0.25	TIM	0.36	N	40.0	14.4	576 Btuh
6	2, NFRC 0.25	Vinyl	0.36	W	4.0	14.4	58 Btuh
7	2, NFRC 0.25	Vinyl	0.36	W	15.0	14.4	216 Btuh
	Window Total				172.0(sqft)		2477 Btuh

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	320	3.09	989 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	268	3.09	828 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	327	3.09	1011 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	249	3.09	770 Btuh
	Wall Total				1164(sqft)		3598 Btuh

Doors	Type	Storm	Ueff.	Area X	HTM=	Load
1	Insulated - Exterior,	n	(0.460)	20	18.4	368 Btuh
2	Insulated - Exterior,	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/Metal	(0.025)	38.0/0.0	1800	1.0	1827 Btuh
	Ceiling Total			1800(sqft)		1827Btuh

Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	172.0 ft(perim.)	47.2	8118 Btuh
	Floor Total			1800 sqft		8118 Btuh

	Envelope Subtotal:	16756 Btuh

Infiltration	Type	Wholehouse ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural	0.15	14400	1.00	36.7	1608 Btuh

Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.306)	5625 Btuh
All Zones	**Sensible Subtotal All Zones**	**23990 Btuh**

Manual J Winter Calculations

Residential Load - Component Details (continued)

Charles & Dorris Button
1687 NW Queen Road
Lake City, FL 32055

Project Title:
Button Residence
Building Type: User

10/14/2020

WHOLE HOUSE TOTALS		
Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	23990 Btuh 0 Btuh 23990 Btuh

EQUIPMENT		
1. Electric Heat Pump	#	23990 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

Charles & Dorris Button
1687 NW Queen Road
Lake City, FL 32055

Project Title:
Button Residence

10/14/2020

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

Component Loads for Whole House

Window	Type* Panes	SHGC	U	InSh	IS	Ornt	Overhang Len	Hgt	Window Area(sqft) Gross	Shaded	Unshaded	HTM Shaded	Unshaded	Load
1	2 NFRC	0.25, 0.36		No	No	S	9.5ft.	0.5ft.	60.0	60.0	0.0	12	14	726 Btuh
2	2 NFRC	0.25, 0.36		No	No	E	9.5ft.	0.5ft.	20.0	20.0	0.0	12	31	242 Btuh
3	2 NFRC	0.25, 0.36		No	No	N	9.5ft.	0.5ft.	18.0	0.0	18.0	12	12	218 Btuh
4	2 NFRC	0.25, 0.36		No	No	N	9.5ft.	0.5ft.	15.0	0.0	15.0	12	12	181 Btuh
5	2 NFRC	0.25, 0.36		No	No	N	9.5ft.	0.5ft.	40.0	0.0	40.0	12	12	484 Btuh
6	2 NFRC	0.25, 0.36		No	No	W	9.5ft.	0.5ft.	4.0	4.0	0.0	12	31	48 Btuh
7	2 NFRC	0.25, 0.36		No	No	W	9.5ft.	0.5ft.	15.0	15.0	0.0	12	31	181 Btuh
	Excursion													163 Btuh
	Window Total								172 (sqft)					2244 Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load
1	Frame - Wood - Ext	0.08	19.0/0.0	320.0	1.7	529 Btuh
2	Frame - Wood - Ext	0.08	19.0/0.0	268.0	1.7	443 Btuh
3	Frame - Wood - Ext	0.08	19.0/0.0	327.0	1.7	541 Btuh
4	Frame - Wood - Ext	0.08	19.0/0.0	249.0	1.7	412 Btuh
	Wall Total			1164 (sqft)		1925 Btuh

Doors	Type	Area (sqft)	HTM	Load
1	Insulated - Exterior	20.0	13.8	276 Btuh
2	Insulated - Exterior	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/Metal/RB	0.025	38.0/0.0	1800.0	0.86	1553 Btuh
	Ceiling Total			1800 (sqft)		1553 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	1800 (ft-perimeter)	0.0	0 Btuh
	Floor Total		1800.0 (sqft)		0 Btuh

	Envelope Subtotal:	6274 Btuh

Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.11	14400	1	27.5	573 Btuh

Internal gain	Occupants	Btuh/occupant		Appliance	Load
	4	X 230	+	1200	2120 Btuh

	Sensible Envelope Load:	8967 Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.517)	4634 Btuh
	Sensible Load All Zones	**13601 Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

Charles & Dorris Button
1687 NW Queen Road
Lake City, FL 32055

Project Title: Button Residence
Climate:FL_GAINESVILLE_REGIONAL_A

10/14/2020

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	**Sensible Envelope Load All Zones**	**8967 Btuh**
	Sensible Duct Load	4634 Btuh
	Total Sensible Zone Loads	**13601 Btuh**
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	**13601 Btuh**
	Latent infiltration gain (for 51 gr. humidity difference)	951 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1364 Btuh
	Latent occupant gain (4.0 people @ 200 Btuh per person)	800 Btuh
	Latent other gain	0 Btuh
	Latent total gain	**3115 Btuh**
	TOTAL GAIN	**16716 Btuh**

EQUIPMENT

1. Central Unit	#	16553 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