FORM R405-2017

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	Crosby Residence	Builder Name:	Sparks Construction, Inc.
Street:		Permit Office:	Columbia County
City, State, Zip:	Lake City , FL , 32055	Permit Number:	
Owner:	Marcella Crosby	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	6
5. Is this a worst case?	No
6. Conditioned floor area above grade (ft²)	3891
Conditioned floor area below grade (ft²)	0

7. Windows (511.0 sqft.)

	Description	Area
a. U-Factor:	Dbl, U=0.36	511.00 ft²
SHGC:	SHGC=0.25	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
d. U-Factor:	N/A	ft²
SHGC:		

Area Weighted Average Overhang Depth: 4.913 ft.
Area Weighted Average SHGC: 0.250

8. Floor Types (3891.0 sqft.)

	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	2863.00 ft²
b. Floor Over Other Space	R=19.0	1028.00 ft²
c. N/A	R=	ft²

9. Wall Types (3779.3 sqft.)

	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	3611.30 ft²
b. Frame - Wood, Adjacent	R=13.0	168.00 ft²
c. N/A	R=	ft²
d. N/A	R=	ft²

10. Ceiling Types (3006.0 sqft.)

	Insulation	Area
a. Under Attic (Vented)	R=38.0	3006.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

11. Ducts

	R	ft²
a. Sup: Attic, Ret: Attic, AH: 1st Floor	6	972.75

12. Cooling systems

	kBtu/hr	Efficiency
a. Central Unit	24.7	SEER:14.00

13. Heating systems

	kBtu/hr	Efficiency
a. Electric Heat Pump	30.1	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: 0.131

Total Proposed Modified Loads: 97.53
Total Baseline Loads: 97.77

PASS

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

PREPARED BY: _____
DATE: _____

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: _____
DATE: _____

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

BUILDING OFFICIAL: _____
DATE: _____

- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.3.2.1.
- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires an envelope leakage test report with envelope leakage no greater than 5.00 ACH50 (R402.4.1.2).

FORM R405-2017

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	Crosby Residence	Bedrooms:	6	Address Type:	Lot Information
Building Type:	User	Conditioned Area:	3891	Lot #	5
Owner Name:	Marcella Crosby	Total Stories:	2	Block/Subdivision:	Blackberry Farm
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:	Sparks Construction, Inc.	Rotate Angle:	0	Street:	
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	3891	33991

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	1st Floor	2863	25767	Yes	8	4	1	Yes	Yes	Yes
2	2nd Floor	1028	8224	No	6	2	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	260 ft	0	2863 ft²	----	0	0	1
_____	2	Floor Over Other Space	2nd Floor	----	----	1028 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	3441 ft²	954 ft²	Medium	Y	0.96	No	0.9	No	0	33.7

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	300	2863 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	1927 ft²	0.11	Wood
_____	2	Under Attic (Vented)	2nd Floor	38	Double Batt	1079 ft²	0.11	Wood

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	N	Exterior	Frame - Wood	1st Floor	13	17		9		153.0 ft²		0.23	0.75	0
____	2	W	Exterior	Frame - Wood	1st Floor	13	9		9		81.0 ft²		0.23	0.75	0
____	3	N	Exterior	Frame - Wood	1st Floor	13	6		9		54.0 ft²		0.23	0.75	0
____	4	W	Exterior	Frame - Wood	1st Floor	13	36		9		324.0 ft²		0.23	0.75	0
____	5	S	Exterior	Frame - Wood	1st Floor	13	13		9		117.0 ft²		0.23	0.75	0
____	6	W	Exterior	Frame - Wood	1st Floor	13	11	8	9		105.0 ft²		0.23	0.75	0
____	7	S	Exterior	Frame - Wood	1st Floor	13	49		9		441.0 ft²		0.23	0.75	0
____	8	E	Exterior	Frame - Wood	1st Floor	13	17	8	9		159.0 ft²		0.23	0.75	0
____	9	N	Exterior	Frame - Wood	1st Floor	13	15		9		135.0 ft²		0.23	0.75	0
____	10	E	Exterior	Frame - Wood	1st Floor	13	39		9		351.0 ft²		0.23	0.75	0
____	11	N	Exterior	Frame - Wood	1st Floor	13	5	4	9		48.0 ft²		0.23	0.75	0
____	12	E	Exterior	Frame - Wood	1st Floor	13	10		9		90.0 ft²		0.23	0.75	0
____	13	N	Garage	Frame - Wood	1st Floor	13	18	8	9		168.0 ft²		0.23	0.75	0
____	14	W	Exterior	Frame - Wood	1st Floor	13	10		9		90.0 ft²		0.23	0.75	0
____	15	W	Exterior	Frame - Wood	2nd Floor	13	36		8		288.0 ft²		0.23	0.75	0
____	16	S	Exterior	Frame - Wood	2nd Floor	13	24	1	8		192.7 ft²		0.23	0.75	0
____	17	W	Exterior	Frame - Wood	2nd Floor	13	9		8		72.0 ft²		0.23	0.75	0
____	18	S	Exterior	Frame - Wood	2nd Floor	13	21	10	8		174.7 ft²		0.23	0.75	0
____	19	E	Exterior	Frame - Wood	2nd Floor	13	45		8		360.0 ft²		0.23	0.75	0
____	20	N	Exterior	Frame - Wood	2nd Floor	13	47		8		376.0 ft²		0.23	0.75	0

DOORS

√	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
_____	1	W	Insulated	1st Floor	None	.46	6		6	8	40 ft²
_____	2	E	Insulated	1st Floor	None	.46	2	6	6	8	16.7 ft²
_____	3	N	Insulated	1st Floor	None	.46	3		3	8	11 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	W	4	Vinyl	Low-E Double	Yes	0.36	0.25	N	72.0 ft²	9 ft 6 in	1 ft 0 in	None	None
_____	2	W	4	Vinyl	Low-E Double	Yes	0.36	0.25	N	6.0 ft²	9 ft 6 in	0 ft 6 in	None	None
_____	3	S	7	Vinyl	Low-E Double	Yes	0.36	0.25	N	54.0 ft²	1 ft 0 in	5 ft 0 in	None	None
_____	4	S	7	Vinyl	Low-E Double	Yes	0.36	0.25	N	16.0 ft²	1 ft 0 in	4 ft 0 in	None	None
_____	5	E	8	Vinyl	Low-E Double	Yes	0.36	0.25	N	48.0 ft²	1 ft 0 in	1 ft 0 in	None	None
_____	6	E	10	Vinyl	Low-E Double	Yes	0.36	0.25	N	96.0 ft²	10 ft 0 in	1 ft 0 in	None	None
_____	7	E	10	Vinyl	Low-E Double	Yes	0.36	0.25	N	48.0 ft²	10 ft 0 in	1 ft 0 in	None	None

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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	Overhang Separation	Int Shade	Screening
_____	8	W	14	Vinyl	Low-E Double	Yes	0.36	0.25	N	9.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	9	W	15	Vinyl	Low-E Double	Yes	0.36	0.25	N	75.0 ft²	1 ft 0 in	2 ft 0 in	None	None
_____	10	S	18	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	1 ft 0 in	4 ft 0 in	None	None
_____	11	E	19	Vinyl	Low-E Double	Yes	0.36	0.25	N	72.0 ft²	1 ft 6 in	0 ft 6 in	None	None

GARAGE

√	#	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
_____	1	1140 ft²	1140 ft²	117.33 ft	10 ft	1

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000278	2832.6	155.5	292.45	.1427	5

HEATING SYSTEM

√	#	System Type	Subtype	Speed	Efficiency	Capacity	Block	Ducts
_____	1	Electric Heat Pump/	None	Single	HSPF:8.2	30.14 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	24.73 kBtu/hr	750 cfm	0.7	1	sys#1

HOT WATER SYSTEM

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

SOLAR HOT WATER SYSTEM

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

DUCTS

√	#	---- Supply ---- Location	R-Value	Area	---- Return ---- Location	Area	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat	HVAC # Cool
_____	1	Attic	6	972.75 f	Attic	194.55 f	Default Leakage	1st Floor	(Default) c	(Default) c			1	1

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INPUT SUMMARY CHECKLIST REPORT

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	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* = 100

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. 6
5. Is this a worst case? (yes/no)	5. No
6. Conditioned floor area (sq. ft.)	6. 3891
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. 511.0
8. Skylights	
a) U-factor:(weighted average)	8a. NA
b) Solar Heat Gain Coefficient (SHGC)	8b. NA
9. Floor type, insulation level:	
a) Slab-on-grade (R-value)	9a. 0.0
b) Wood, raised (R-value)	9b.
c) Concrete, raised (R-value)	9c.
10. Wall type and insulation:	
A. Exterior:	
1. Wood frame (Insulation R-value)	10A1. 13.0
2. Masonry (Insulation R-value)	10A2.
B. Adjacent:	
1. Wood frame (Insulation R-value)	10B1. 13.0
2. Masonry (Insulation R-value)	10B2.
11. Ceiling type and insulation level	
a) Under attic	11a. 38.0
b) Single assembly	11b.
c) Knee walls/skylight walls	11c.
d) Radiant barrier installed	11d. Yes

12. Ducts, location & insulation level	
a) Supply ducts	R 6.0
b) Return ducts	R 6.0
c) AHU location	1st Floor
13. Cooling system:	Capacity 24.7
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 30.1
a) Split system heat pump	HSPF
b) Single package heat pump	HSPF
c) Electric resistance	COP
d) Gas furnace, natural gas	AFUE
e) Gas furnace, LPG	AFUE
f) Other	8.20
15. Water heating system	
a) Electric resistance	EF 0.92
b) Gas fired, natural gas	EF
c) Gas fired, LPG	EF
d) Solar system with tank	EF
e) Dedicated heat pump with tank	EF
f) Heat recovery unit	HeatRec%
g) Other	
16. HVAC credits claimed (Performance Method)	
a) Ceiling fans	
b) Cross ventilation	Yes
c) Whole house fan	No
d) Multizone cooling credit	
e) Multizone heating credit	
f) Programmable thermostat	Yes

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

I certify that this home has complied with the Florida Building Code, Energy Conservation, through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL display card will be completed based on installed code compliant features.

Builder Signature:_____ Date:_____

Address of New Home: _____ City/FL Zip: Lake City, FL 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: Sparks Construction, Inc. Community: Lot: 5

Address:

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 ÷ 33991 = _____
CFM(50) Building Volume ACH(50)

☐ **PASS**

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

Method for calculating building volume:

○ Retrieved from architectural plans

● Code software calculated

○ Field measured and calculated

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

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

Testing Company

Company Name: _____ Phone: _____

I hereby verify that the above Air Leakage results are in accordance with the 2017 6th Edition Florida Building Code Energy Conservation requirements according to the compliance method selected above.

Signature of Tester: _____ Date of Test: _____

Printed Name of Tester: _____

License/Certification #: _____ Issuing Authority: _____

Residential System Sizing Calculation

Summary

Marcella Crosby

Lake City, FL 32055

Project Title:
Crosby Residence

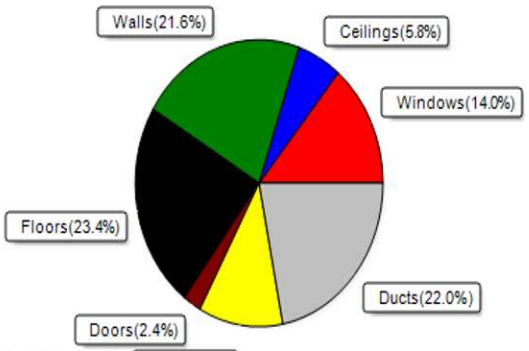
3/27/2020

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M) Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(51gr.)						
Winter design temperature(TMY3 99%)	30	F		Summer design temperature(TMY3 99%)	94	F
Winter setpoint	70	F		Summer setpoint	75	F
Winter temperature difference	40	F		Summer temperature difference	19	F
Total heating load calculation	**52493**	**Btuh**		**Total cooling load calculation**	**45720**	**Btuh**
Submitted heating capacity	% of calc	Btuh		Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	57.4	30142		Sensible (SHR = 0.70)	47.0	17310
Heat Pump + Auxiliary(0.0kW)	57.4	30142		Latent	83.7	7419
				Total (Electric Heat Pump)	54.1	24729

WINTER CALCULATIONS

Winter Heating Load (for 3891 sqft)

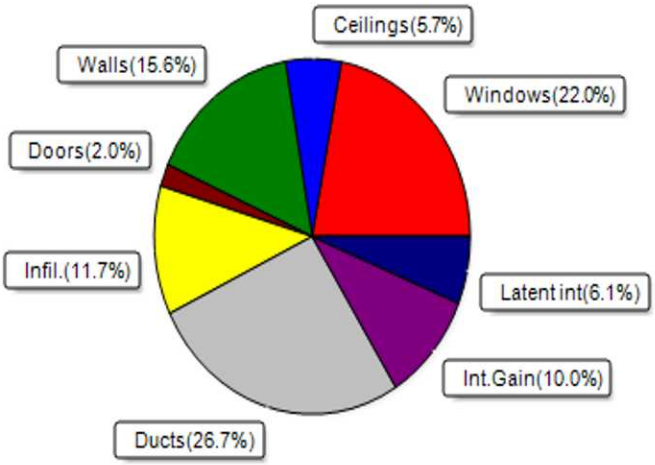
Load component			Load	
Window total	511	sqft	7358	Btuh
Wall total	3201	sqft	11363	Btuh
Door total	68	sqft	1245	Btuh
Ceiling total	3006	sqft	3052	Btuh
Floor total	See detail report		12272	Btuh
Infiltration	129	cfm	5665	Btuh
Duct loss			11537	Btuh
Subtotal			**52493**	**Btuh**
Ventilation	0	cfm	0	Btuh
TOTAL HEAT LOSS			**52493**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 3891 sqft)

Load component			Load	
Window total	511	sqft	10077	Btuh
Wall total	3201	sqft	7154	Btuh
Door total	68	sqft	934	Btuh
Ceiling total	3006	sqft	2594	Btuh
Floor total			0	Btuh
Infiltration	97	cfm	2018	Btuh
Internal gain			4570	Btuh
Duct gain			9508	Btuh
Sens. Ventilation	0	cfm	0	Btuh
Blower Load			0	Btuh
Total sensible gain			**36855**	**Btuh**
Latent gain(ducts)			2717	Btuh
Latent gain(infiltration)			3349	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			2800	Btuh
Total latent gain			**8865**	**Btuh**
TOTAL HEAT GAIN			**45720**	**Btuh**



8th Edition

EnergyGauge® System Sizing
PREPARED BY: _____
DATE: _____

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Marcella Crosby
Lake City, FL 32055

Project Title:
Crosby Residence
Building Type: User

3/27/2020

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 F (TMY3 99%)

Component Loads for Whole House

Window	Panes/Type	Frame	U	Orientation	Area(sqft) X	HTM=	Load
1	2, NFRC 0.25	Vinyl	0.36	W	72.0	14.4	1037 Btuh
2	2, NFRC 0.25	Vinyl	0.36	W	6.0	14.4	86 Btuh
3	2, NFRC 0.25	Vinyl	0.36	S	54.0	14.4	778 Btuh
4	2, NFRC 0.25	Vinyl	0.36	S	16.0	14.4	230 Btuh
5	2, NFRC 0.25	Vinyl	0.36	E	48.0	14.4	691 Btuh
6	2, NFRC 0.25	Vinyl	0.36	E	96.0	14.4	1382 Btuh
7	2, NFRC 0.25	Vinyl	0.36	E	48.0	14.4	691 Btuh
8	2, NFRC 0.25	Vinyl	0.36	W	9.0	14.4	130 Btuh
9	2, NFRC 0.25	Vinyl	0.36	W	75.0	14.4	1080 Btuh
10	2, NFRC 0.25	Vinyl	0.36	S	15.0	14.4	216 Btuh
11	2, NFRC 0.25	Vinyl	0.36	E	72.0	14.4	1037 Btuh
	Window Total				511.0(sqft)		7358 Btuh

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	153	3.55	543 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	81	3.55	288 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	54	3.55	192 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	206	3.55	731 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	117	3.55	415 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	105	3.55	373 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	371	3.55	1317 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	111	3.55	394 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	135	3.55	479 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	207	3.55	735 Btuh
11	Frame - Wood	- Ext	(0.089)	13.0/0.0	48	3.55	170 Btuh
12	Frame - Wood	- Ext	(0.089)	13.0/0.0	73	3.55	260 Btuh
13	Frame - Wood	- Adj	(0.089)	13.0/0.0	157	3.55	557 Btuh
14	Frame - Wood	- Ext	(0.089)	13.0/0.0	81	3.55	288 Btuh
15	Frame - Wood	- Ext	(0.089)	13.0/0.0	213	3.55	756 Btuh
16	Frame - Wood	- Ext	(0.089)	13.0/0.0	193	3.55	684 Btuh
17	Frame - Wood	- Ext	(0.089)	13.0/0.0	72	3.55	256 Btuh
18	Frame - Wood	- Ext	(0.089)	13.0/0.0	160	3.55	567 Btuh
19	Frame - Wood	- Ext	(0.089)	13.0/0.0	288	3.55	1022 Btuh
20	Frame - Wood	- Ext	(0.089)	13.0/0.0	376	3.55	1335 Btuh
	Wall Total				3201(sqft)		11363 Btuh

Doors	Type	Storm	Ueff.	Area X	HTM=	Load
1	Insulated - Exterior,	n	(0.460)	40	18.4	736 Btuh
2	Insulated - Exterior,	n	(0.460)	17	18.4	307 Btuh
3	Insulated - Garage,	n	(0.460)	11	18.4	202 Btuh
	Door Total			68(sqft)		1245Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Marcella Crosby
Lake City, FL 32055

Project Title:
Crosby Residence
Building Type: User

3/27/2020

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Vented Attic/L/Shing	(0.025)	38.0/0.0	1927	1.0	1956 Btuh
2	Vented Attic/L/Shing	(0.025)	38.0/0.0	1079	1.0	1095 Btuh
	Ceiling Total			3006(sqft)		3052Btuh
Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	260.0 ft(perim.)	47.2	12272 Btuh
2	Interior	(1.180)	19.0	1028.0 sqft	0.0	0 Btuh
	Floor Total			3891 sqft		12272 Btuh
				Envelope Subtotal:		35291 Btuh

Infiltration	Type	Wholehouse ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural	0.23	33991	1.00	129.4	5665 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att)			(DLM of 0.282)		11537 Btuh
All Zones	**Sensible Subtotal All Zones**					**52493 Btuh**

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	52493 Btuh
	Ventilation Sensible Heat Loss	0 Btuh
	Total Heat Loss	52493 Btuh

EQUIPMENT

1. Electric Heat Pump	#	30142 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

Marcella Crosby

Lake City, FL 32055

Project Title:
Crosby Residence

3/27/2020

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	W	9.5ft.	1.0ft.	72.0	72.0	0.0	12	31	871	Btuh
2	2 NFRC	0.25, 0.36	No	No	W	9.5ft.	0.5ft.	6.0	6.0	0.0	12	31	73	Btuh
3	2 NFRC	0.25, 0.36	No	No	S	1.0ft.	5.0ft.	54.0	6.1	47.9	12	14	747	Btuh
4	2 NFRC	0.25, 0.36	No	No	S	1.0ft.	4.0ft.	16.0	6.7	9.3	12	14	212	Btuh
5	2 NFRC	0.25, 0.36	No	No	E	1.0ft.	1.0ft.	48.0	0.0	48.0	12	31	1485	Btuh
6	2 NFRC	0.25, 0.36	No	No	E	10.0f	1.0ft.	96.0	87.6	8.4	12	31	1320	Btuh
7	2 NFRC	0.25, 0.36	No	No	E	10.0f	1.0ft.	48.0	48.0	0.0	12	31	581	Btuh
8	2 NFRC	0.25, 0.36	No	No	W	1.5ft.	1.0ft.	9.0	0.7	8.3	12	31	265	Btuh
9	2 NFRC	0.25, 0.36	No	No	W	1.0ft.	2.0ft.	75.0	0.0	75.0	12	31	2321	Btuh
10	2 NFRC	0.25, 0.36	No	No	S	1.0ft.	4.0ft.	15.0	5.0	10.0	12	14	201	Btuh
11	2 NFRC	0.25, 0.36	No	No	E	1.5ft.	0.5ft.	72.0	11.9	60.1	12	31	2003	Btuh
	Window Total								511 (sqft)				10077	Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load
1	Frame - Wood - Ext	0.09	13.0/0.0	153.0	2.3	346 Btuh
2	Frame - Wood - Ext	0.09	13.0/0.0	81.0	2.3	183 Btuh
3	Frame - Wood - Ext	0.09	13.0/0.0	54.0	2.3	122 Btuh
4	Frame - Wood - Ext	0.09	13.0/0.0	206.0	2.3	466 Btuh
5	Frame - Wood - Ext	0.09	13.0/0.0	117.0	2.3	265 Btuh
6	Frame - Wood - Ext	0.09	13.0/0.0	105.0	2.3	238 Btuh
7	Frame - Wood - Ext	0.09	13.0/0.0	371.0	2.3	840 Btuh
8	Frame - Wood - Ext	0.09	13.0/0.0	111.0	2.3	251 Btuh
9	Frame - Wood - Ext	0.09	13.0/0.0	135.0	2.3	306 Btuh
10	Frame - Wood - Ext	0.09	13.0/0.0	207.0	2.3	469 Btuh
11	Frame - Wood - Ext	0.09	13.0/0.0	48.0	2.3	109 Btuh
12	Frame - Wood - Ext	0.09	13.0/0.0	73.3	2.3	166 Btuh
13	Frame - Wood - Adj	0.09	13.0/0.0	157.0	1.7	265 Btuh
14	Frame - Wood - Ext	0.09	13.0/0.0	81.0	2.3	183 Btuh
15	Frame - Wood - Ext	0.09	13.0/0.0	213.0	2.3	482 Btuh
16	Frame - Wood - Ext	0.09	13.0/0.0	192.7	2.3	436 Btuh
17	Frame - Wood - Ext	0.09	13.0/0.0	72.0	2.3	163 Btuh
18	Frame - Wood - Ext	0.09	13.0/0.0	159.7	2.3	361 Btuh
19	Frame - Wood - Ext	0.09	13.0/0.0	288.0	2.3	652 Btuh
20	Frame - Wood - Ext	0.09	13.0/0.0	376.0	2.3	851 Btuh
	Wall Total			3201 (sqft)		7154 Btuh

Doors	Type	Area (sqft)	HTM	Load
1	Insulated - Exterior	40.0	13.8	552 Btuh
2	Insulated - Exterior	16.7	13.8	230 Btuh
3	Insulated - Garage	11.0	13.8	152 Btuh
	Door Total	68 (sqft)		934 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	1927.0	0.86	1663 Btuh
2	Vented Attic/Light/Shingle/RB	0.025	38.0/0.0	1079.0	0.86	931 Btuh
	Ceiling Total			3006 (sqft)		2594 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	2863 (ft-perimeter)	0.0	0 Btuh
2	Interior	19.0	1028 (sqft)	0.0	0 Btuh
	Floor Total		3891.0 (sqft)		0 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Marcella Crosby
Lake City, FL 32055

Project Title: Crosby Residence
Climate:FL_GAINESVILLE_REGIONAL_A

3/27/2020

						Envelope Subtotal:		20759 Btuh
Infiltration	Type	Average ACH	Volume(cuft)		Wall Ratio	CFM=	Load	
	Natural	0.17	33991		1	97.0	2018	Btuh
Internal gain		Occupants	Btuh/occupant			Appliance	Load	
		14	X	230	+	1350	4570	Btuh
						Sensible Envelope Load:	27347	Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic)					(DGM of 0.348)	9508	Btuh
						Sensible Load All Zones	**36855**	**Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

Marcella Crosby
Lake City, FL 32055

Project Title: Crosby Residence
Climate:FL_GAINESVILLE_REGIONAL_A

3/27/2020

WHOLE HOUSE TOTALS

	Sensible Envelope Load All Zones	**27347**	**Btuh**
	Sensible Duct Load	9508	Btuh
	Total Sensible Zone Loads	**36855**	**Btuh**
	Sensible ventilation	0	Btuh
	Blower	0	Btuh
Whole House	**Total sensible gain**	**36855**	**Btuh**
Totals for Cooling	Latent infiltration gain (for 51 gr. humidity difference)	3349	Btuh
	Latent ventilation gain	0	Btuh
	Latent duct gain	2717	Btuh
	Latent occupant gain (14.0 people @ 200 Btuh per person)	2800	Btuh
	Latent other gain	0	Btuh
	Latent total gain	**8865**	**Btuh**
	TOTAL GAIN	**45720**	**Btuh**

EQUIPMENT

1. Central Unit	#	24729 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