FORM R405-2017

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	Dutton Res	Builder Name:	Sparky
Street:		Permit Office:	Columbia County
City, State, Zip:	Lake City , FL , 32025	Permit Number:	
Owner:	Randel & Lilian Dutton	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)	1918
Conditioned floor area below grade (ft²)	0

7. Windows (243.9 sqft.)

	Description	Area
a. U-Factor:	Dbl, U=0.36	243.92 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: 1.705 ft.
Area Weighted Average SHGC: 0.250

8. Floor Types (1918.0 sqft.)

	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	1918.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

9. Wall Types (1720.4 sqft.)

	Insulation	Area
a. Frame - Wood, Exterior	R=19.0	1720.40 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²
d. N/A	R=	ft²

10. Ceiling Types (2014.0 sqft.)

	Insulation	Area
a. Under Attic (Vented)	R=38.0	2014.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

11. Ducts

	R	ft²
a. Sup: Attic, Ret: Attic, AH: Main	6	479.5

12. Cooling systems

	kBtu/hr	Efficiency
a. Central Unit	21.5	SEER:14.00

13. Heating systems

	kBtu/hr	Efficiency
a. Electric Heat Pump	27.0	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: 0.127

Total Proposed Modified Loads: 47.86
Total Baseline Loads: 51.07

PASS

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

PREPARED BY: _____
DATE: 7/25/2020

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:	Dutton Res	Bedrooms:	2	Address Type:	Lot Information
Building Type:	User	Conditioned Area:	1918	Lot #	16/28
Owner Name:	Randel & Lilian Dutton	Total Stories:	1	Block/Subdivision:	Cannon Creek Ai
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:	Sparky	Rotate Angle:	0	Street:	
Permit Office:	Columbia County	Cross Ventilation:	Yes	County:	Columbia
Jurisdiction:		Whole House Fan:	No	City, State, Zip:	Lake City , FL , 32025
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	1918	17894.9

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	1918	17894.9	Yes	5	2	1	Yes	Yes	Yes

FLOORS

√	#	Floor Type	Space	Perimeter	R-Value	Area		Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulation	Main	179.5 ft	0	1918 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	Hip	Composition shingles	2305 ft²	0 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	1918 ft²	Y	N

CEILING

√	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
_____	1	Under Attic (Vented)	Main	38	Double Batt	2014 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	N	Exterior	Frame - Wood	Main	19	41	10	9	4	390.4 ft²		0.23	0.75	0
____	2	E	Exterior	Frame - Wood	Main	19	15	2	9	4	141.6 ft²		0.23	0.75	0
____	3	S	Exterior	Frame - Wood	Main	19	2	6	9	4	23.3 ft²		0.23	0.75	0
____	4	E	Exterior	Frame - Wood	Main	19	6	0	9	4	56.0 ft²		0.23	0.75	0
____	5	N	Exterior	Frame - Wood	Main	19	2	6	9	4	23.3 ft²		0.23	0.75	0
____	6	E	Exterior	Frame - Wood	Main	19	26	8	9	4	248.9 ft²		0.23	0.75	0
____	7	S	Exterior	Frame - Wood	Main	19	41	8	9	4	388.9 ft²		0.23	0.75	0
____	8	W	Exterior	Frame - Wood	Main	19	48		9	4	448.0 ft²		0.23	0.75	0

DOORS

√	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
_____	1	E	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	N	1	Vinyl	Low-E Double	Yes	0.36	0.25	N	72.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	2	E	2	Vinyl	Low-E Double	Yes	0.36	0.25	N	36.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	3	E	4	TIM	Low-E Double	Yes	0.36	0.25	N	6.7 ft²	9 ft 0 in	1 ft 0 in	None	None
_____	4	S	7	Vinyl	Low-E Double	Yes	0.36	0.25	N	36.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	5	W	8	Vinyl	Low-E Double	Yes	0.36	0.25	N	36.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	6	S	7	Vinyl	Low-E Double	Yes	0.36	0.25	N	17.3 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	7	W	8	TIM	Low-E Double	Yes	0.36	0.25	N	40.0 ft²	1 ft 6 in	1 ft 0 in	None	None

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000296	1491.2	81.87	153.96	.1186	5

HEATING SYSTEM

√	#	System Type	Subtype	Speed	Efficiency	Capacity	Block	Ducts
_____	1	Electric Heat Pump/	None	Single	HSPF:8.2	27.03 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	21.46 kBtu/hr	630 cfm	0.7	1	sys#1

FORM R405-2017

INPUT SUMMARY CHECKLIST REPORT

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

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	Cool
_____	1	Attic	6	479.5 ft²	Attic	95.9 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* = 94

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. 1918
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. 243.9
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 21.5
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 27.0
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: _____ City/FL Zip: Lake City, FL 32025

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: Sparky Community: Lot: 16/28

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 R405-2017 (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 ÷ 17895 = _____
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

Randel & Lilian Dutton

Lake City, FL 32025

Project Title:
Dutton Res

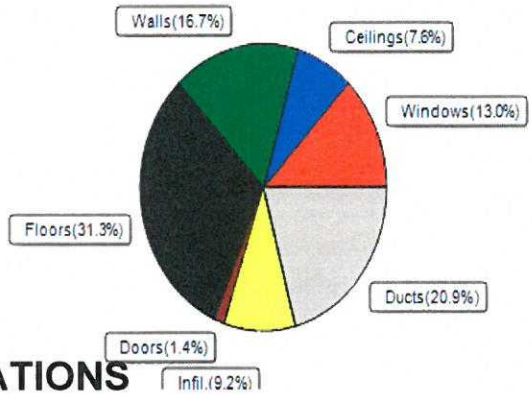
7/25/2020

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	**27026**	**Btuh**	**Total cooling load calculation**	**21655**	**Btuh**
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	100.0	27026	Sensible (SHR = 0.70)	84.5	15025
Heat Pump + Auxiliary(0.0kW)	100.0	27026	Latent	166.3	6439
			Total (Electric Heat Pump)	99.1	21465

WINTER CALCULATIONS

Winter Heating Load (for 1918 sqft)

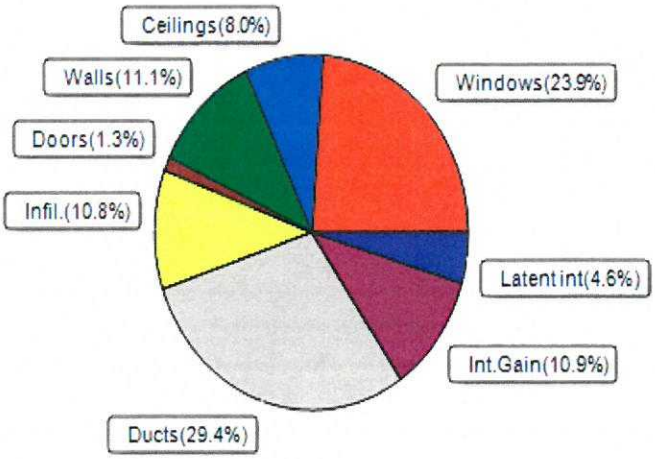
Load component			Load	
Window total	244	sqft	3512	Btuh
Wall total	1457	sqft	4502	Btuh
Door total	20	sqft	368	Btuh
Ceiling total	2014	sqft	2045	Btuh
Floor total	1918	sqft	8472	Btuh
Infiltration	57	cfm	2478	Btuh
Duct loss			5649	Btuh
Subtotal			**27026**	**Btuh**
Ventilation	0	cfm	0	Btuh
TOTAL HEAT LOSS			**27026**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 1918 sqft)

Load component			Load	
Window total	244	sqft	5173	Btuh
Wall total	1457	sqft	2409	Btuh
Door total	20	sqft	276	Btuh
Ceiling total	2014	sqft	1738	Btuh
Floor total			0	Btuh
Infiltration	42	cfm	883	Btuh
Internal gain			2350	Btuh
Duct gain			4956	Btuh
Sens. Ventilation	0	cfm	0	Btuh
Blower Load			0	Btuh
Total sensible gain			**17784**	**Btuh**
Latent gain(ducts)			1406	Btuh
Latent gain(infiltration)			1465	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			1000	Btuh
Total latent gain			**3871**	**Btuh**
TOTAL HEAT GAIN			**21655**	**Btuh**



Powered by ACCA MANUAL J 8th Edition

EnergyGauge® System Sizing
PREPARED BY: _____
DATE: 7/25/2020

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Randel & Lilian Dutton
Lake City, FL 32025

Project Title:
Dutton Res
Building Type: User

7/25/2020

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	N	72.0	14.4	1037 Btuh
2	2, NFRC 0.25	Vinyl	0.36	E	36.0	14.4	518 Btuh
3	2, NFRC 0.25	TIM	0.36	E	6.7	14.4	96 Btuh
4	2, NFRC 0.25	Vinyl	0.36	S	36.0	14.4	518 Btuh
5	2, NFRC 0.25	Vinyl	0.36	W	36.0	14.4	518 Btuh
6	2, NFRC 0.25	Vinyl	0.36	S	17.3	14.4	248 Btuh
7	2, NFRC 0.25	TIM	0.36	W	40.0	14.4	576 Btuh
	Window Total				243.9(sqft)		3512 Btuh

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	318	3.09	984 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	106	3.09	326 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	23	3.09	72 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	29	3.09	91 Btuh
5	Frame - Wood	- Ext	(0.077)	19.0/0.0	23	3.09	72 Btuh
6	Frame - Wood	- Ext	(0.077)	19.0/0.0	249	3.09	769 Btuh
7	Frame - Wood	- Ext	(0.077)	19.0/0.0	336	3.09	1037 Btuh
8	Frame - Wood	- Ext	(0.077)	19.0/0.0	372	3.09	1150 Btuh
	Wall Total				1457(sqft)		4502 Btuh

Doors	Type	Storm	Ueff.	Area X	HTM=	Load
1	Insulated - Exterior, n		(0.460)	20	18.4	368 Btuh
	Door Total			20(sqft)		368Btuh

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Vented Attic/L/Shing	(0.025)	38.0/0.0	2014	1.0	2045 Btuh
	Ceiling Total			2014(sqft)		2045Btuh

Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	179.5 ft(perim.)	47.2	8472 Btuh
	Floor Total			1918 sqft		8472 Btuh

	Envelope Subtotal:	18900 Btuh

Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural		0.19	17895	1.00	56.6	2478 Btuh

Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.264)	5649 Btuh
All Zones	**Sensible Subtotal All Zones**	**27026 Btuh**

Manual J Winter Calculations

Residential Load - Component Details (continued)

Randel & Lilian Dutton
Lake City, FL 32025

Project Title:
Dutton Res
Building Type: User

7/25/2020

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	27026 Btuh 0 Btuh 27026 Btuh

EQUIPMENT

1. Electric Heat Pump	#	27026 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

Randel & Lilian Dutton

Lake City, FL 32025

Project Title:
Dutton Res

7/25/2020

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	N	1.5ft.	1.0ft.	72.0	0.0	72.0	12	12	871 Btuh
2	2 NFRC	0.25, 0.36		No	No	E	1.5ft.	1.0ft.	36.0	1.5	34.5	12	31	1086 Btuh
3	2 NFRC	0.25, 0.36		No	No	E	9.0ft.	1.0ft.	6.7	6.5	0.2	12	31	84 Btuh
4	2 NFRC	0.25, 0.36		No	No	S	1.5ft.	1.0ft.	36.0	36.0	0.0	12	14	436 Btuh
5	2 NFRC	0.25, 0.36		No	No	W	1.5ft.	1.0ft.	36.0	1.5	34.5	12	31	1086 Btuh
6	2 NFRC	0.25, 0.36		No	No	S	1.5ft.	1.0ft.	17.3	17.3	0.0	12	14	209 Btuh
7	2 NFRC	0.25, 0.36		No	No	W	1.5ft.	1.0ft.	40.0	1.5	38.5	12	31	1210 Btuh
	Excursion													191 Btuh
	Window Total								244 (sqft)					5173 Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load
1	Frame - Wood - Ext	0.08	19.0/0.0	318.4	1.7	527 Btuh
2	Frame - Wood - Ext	0.08	19.0/0.0	105.6	1.7	175 Btuh
3	Frame - Wood - Ext	0.08	19.0/0.0	23.3	1.7	39 Btuh
4	Frame - Wood - Ext	0.08	19.0/0.0	29.3	1.7	49 Btuh
5	Frame - Wood - Ext	0.08	19.0/0.0	23.3	1.7	39 Btuh
6	Frame - Wood - Ext	0.08	19.0/0.0	248.9	1.7	412 Btuh
7	Frame - Wood - Ext	0.08	19.0/0.0	335.6	1.7	555 Btuh
8	Frame - Wood - Ext	0.08	19.0/0.0	372.0	1.7	615 Btuh
	Wall Total			1457 (sqft)		2409 Btuh

Doors	Type	Area (sqft)	HTM	Load
1	Insulated - Exterior	20.0	13.8	276 Btuh
	Door Total	20 (sqft)		276 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	2014.0	0.86	1738 Btuh
	Ceiling Total			2014 (sqft)		1738 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	1918 (ft-perimeter)	0.0	0 Btuh
	Floor Total		1918.0 (sqft)		0 Btuh

	Envelope Subtotal:	9596 Btuh

	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
Infiltration	Natural	0.14	17895	1	42.4	883 Btuh

	Occupants		Btuh/occupant		Appliance	Load
Internal gain	5	X	230	+	1200	2350 Btuh

Sensible Envelope Load:	12828 Btuh
Duct load (Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.386)	4956 Btuh
Sensible Load All Zones	**17784 Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

Randel & Lilian Dutton
Lake City, FL 32025

Project Title: Dutton Res

Climate:FL_GAINESVILLE_REGIONAL_A

7/25/2020

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	**Sensible Envelope Load All Zones**	**12828**	**Btuh**
	Sensible Duct Load	4956	Btuh
	Total Sensible Zone Loads	**17784**	**Btuh**
	Sensible ventilation	0	Btuh
	Blower	0	Btuh
	Total sensible gain	**17784**	**Btuh**
	Latent infiltration gain (for 51 gr. humidity difference)	1465	Btuh
	Latent ventilation gain	0	Btuh
	Latent duct gain	1406	Btuh
	Latent occupant gain (5.0 people @ 200 Btuh per person)	1000	Btuh
	Latent other gain	0	Btuh
	Latent total gain	**3871**	**Btuh**
	TOTAL GAIN	**21655**	**Btuh**

EQUIPMENT

1. Central Unit	#	21465 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